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|--|------------------------------------|-------------------------------------|---|---|---------------------------------|
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| 1. REPORT DATE 2012 | | 2. REPORT TYPE | | 3. DATES COVERED 00-00-2012 to 00-00-2012 | |
| 4. TITLE AND SUBTITLE Is Military Disability Compensation Adequate to Offset Civilian Earnings Losses from Service-Connected Disabilities? | | | | 5a. CONTRACT NUMBER | |
| | | | | 5b. GRANT NUMBER | |
| | | | | 5c. PROGRAM ELEMENT NUMBER | |
| 6. AUTHOR(S) | | | | 5d. PROJECT NUMBER | |
| | | | | 5e. TASK NUMBER | |
| | | | | 5f. WORK UNIT NUMBER | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) RAND Corporation, National Defense Research Institute, 1776 Main Street, P.O. Box 2138, Santa Monica, CA, 90407-2138 | | | | 8. PERFORMING ORGANIZATION REPORT NUMBER | |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | | | | 10. SPONSOR/MONITOR'S ACRONYM(S) | |
| | | | | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) | |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited | | | | | |
| 13. SUPPLEMENTARY NOTES | | | | | |
| 14. ABSTRACT | | | | | |
| 15. SUBJECT TERMS | | | | | |
| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT Same as Report (SAR) | 18. NUMBER OF PAGES 129 | 19a. NAME OF RESPONSIBLE PERSON |
| a. REPORT unclassified | b. ABSTRACT unclassified | c. THIS PAGE unclassified | | | |

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Is Military Disability Compensation Adequate to Offset Civilian Earnings Losses from Service-Connected Disabilities?

Richard Buddin, Bing Han

Prepared for the Office of the Secretary of Defense

Approved for public release; distribution unlimited



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The research described in this report was prepared for the Office of the Secretary of Defense (OSD). The research was conducted within the RAND National Defense Research Institute, a federally funded research and development center sponsored by OSD, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community under Contract W74V8H-06-C-0002.

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Preface

The Department of Defense (DoD) and Department of Veterans Affairs (VA) offer disability compensation to servicemembers who are injured while serving on active military duty. A primary objective of these payments is to offset possible civilian earnings losses associated with service-connected disabilities. This research examines civilian labor-market outcomes for veterans who left active duty in recent years. The analysis compares the labor force participation and earnings of disabled veterans with those of similar veterans without a service-connected disability. The study shows whether current compensation payments are adequate to offset potential earnings losses for various groups of recently disabled veterans. The research should be of interest to those concerned with military disability compensation as well as the implications of that issue for recruiting and retention.

This research was sponsored by the Deputy Under Secretary of Defense for Military Personnel Policy under its Directorate for Compensation. It was conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

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Summary

Introduction

Casualties in Iraq and Afghanistan have heightened concern about whether disability compensation and programs provide adequate support for military veterans. The Departments of Defense and Veterans' Affairs pay about \$35 billion in disability compensation to about 3.2 million veterans each year. Their disabilities range from battlefield injuries to health conditions like diabetes and asthma.

This research looks at the adequacy of disability compensation to offset the reduction in civilian earnings opportunities that are associated with service-connected disabilities (SCDs). Compensation is based on a schedule of ratings that nominally reflects the average loss in civilian earnings related to each disability. Until recent years, research has not directly compared disability payments with the actual civilian earnings losses of veterans.

Our analysis focuses on recent cohorts of veterans who left active military service between fiscal year (FY)1993 and FY2004. We track their civilian earnings and labor force participation (LFP) for up to 12 years, from 1994 through 2005.¹ We follow civilian labor-market outcomes for veterans in these cohorts and compare the labor-market success of veterans with and without SCDs.

This research addresses four questions:

1. How do civilian LFP and earnings vary with SCD rating? We examine whether disability compensation is sufficient to offset civilian earnings losses.
2. Are earnings losses larger for some groups of veterans than for others? Veterans vary substantially by education, age at military separation, and other factors, so earnings losses might be adequate for some groups and inadequate for others.
3. Do earnings losses differ for those in the DoD and VA compensation programs? Christensen et al. (2007) argued that DoD underrates disabilities relative to the VA. If that is so, then we would expect veterans in the DoD program to have greater earnings losses than veterans with the same rating in the VA program.
4. How do civilian earnings losses vary over time? Disabled veterans might have more difficulty than others in finding a good civilian job match. If so, they may have large initial earnings losses (i.e., take more time finding a civilian job or have lower initial wages)

¹ The analysis does not track more-recent separations and earnings of veterans, because we were unable to obtain civilian earnings data for years beyond 2005.

than other veterans, but these problems may abate after an initial transition period. Disabilities might hamper a veteran's transition to civilian employment and have a smaller effect on subsequent labor-market success. In addition, some SCDs might become more limiting over time, so initial market outcomes might provide a distorted indication of how SCDs are affecting earnings losses.

Background on Disability Compensation Programs

DoD and VA have separate programs that compensate veterans for SCDs. The DoD program compensates servicemembers with SCDs who receive a disability separation from active military duty because they are medically unfit to perform their duties.² The VA compensation program compensates veterans who have a SCD and receive a nondisability separation from active duty. Some nondisability separatees are eligible for military retirement (i.e., career members), but most serve fewer years and leave at the end of the term of service. In addition, many veterans in the DoD program apply for and receive disability benefits through the VA program soon after leaving active duty. The VA benefits offset disability payments available from the DoD.

Our research also compared features of the DoD and VA system with civilian disability programs.

VA Disability Program

The VA spends about \$34 billion per year on compensation to over 3 million veterans with SCDs. Compensation amounts are based on the Veterans Affairs Schedule of Rated Disabilities (VASRD). Ratings are assigned in 10-percentage-point intervals associated with specific medical conditions for each veteran with a SCD. Medical evaluations are conducted by DoD as part of active duty separation procedures, but many veterans are reassessed by the VA.

By federal regulation, the VASRD is based on the "average impairment in civilian occupational earning capacity" associated with each SCD (see 38 CFR §4.1, 2010). SCDs are broadly defined for active duty personnel, so the injury or condition is not necessarily related to military training or deployment. For example, servicemembers who are injured in an off-duty automobile accident are eligible for disability compensation. The key factors in determining the eligibility for compensation for a SCD are that the condition is related to time served on active military duty and is not self-inflicted.³

The VA program has faced several types of criticism in recent years:

- *VASRD is out of date.* Several recent studies have argued that the schedule does not reflect current medical practices or the current limitations of medical conditions. Furthermore, the payment schedule is only nominally related to actual earnings losses.

² Active-duty personnel retire from the military with either a nondisability or disability retirement. Nondisability retirement is based on length of service—usually 20 or more years. A number of nondisability retired veterans have a service-connected disability and are eligible for military disability compensation from the VA. These retirees are "nondisability retired veterans with a disability," but the disability was not severe enough to preclude them from satisfactorily completing their military service.

³ In the past couple of years, VA physicians have begun reviewing the ratings of members declared unfit by Physical Evaluation Boards. This new policy is designed to create more consistency between DoD and VA ratings for members leaving active duty, but the effects of the policy have not yet been evaluated.

- *“Average impairment” may shortchange some.* Veterans have diverse skills and opportunities in the civilian sector. Reimbursement based on “average impairment” at each ratings level may leave considerable variability in how compensation benefits offset the earnings losses of veterans with different levels of experience and education.
- *VASRD includes quality of life (QOL).* The compensation payments under VASRD are not a linear function of the rated disability percentage. The payments for high rating are disproportionately large relative to those for smaller ratings. Some argue that the VASRD implicitly includes payments for reduced QOL. QOL is not necessarily proportional to earnings losses for particular SCDs, however, so it is unclear how the schedule could effectively blend QOL with earnings loss.
- *Disability compensation “crowds out” retirement compensation.* Until recent years, most military retirees received the maximum of their retirement entitlement and their disability entitlement. This policy is being phased out under a new “concurrent receipt” law that allows veterans with highly rated disabilities to receive full disability and retirement payments.⁴

DoD Disability Program

DoD provides disability compensation to servicemembers who sustain an SCD that renders them unfit to perform their military job. These members receive a disability separation from active duty. DoD has two disability separation alternatives—disability severance and disability retirement. Members with SCDs rated below 30 percent receive a disability severance—a one-time lump sum payment based on member experience and pay grade (irrespective of the rating level). Members with ratings of 30 percent or more receive a disability retirement where ongoing monthly payments are a function of the disability rating, years of experience, and military paygrade.

Most recipients of disability severance and retirement payments apply to the VA for disability payments soon after their separation from active duty. The high application rate is driven by three factors. First, the DoD payments are generally taxable, whereas VA disability compensation is tax-free. Second, DoD assigns a rating based solely on the condition that makes a servicemember unfit to remain on active duty. Most veterans leave with multiple conditions, so they may receive a higher rating from the VA than the DoD. VA disability payments offset the DoD payments. Third, DoD severance is a one-time lump sum while VA disability compensation is a lifetime annuity. Many members perceive the annuity as being worth more than the lump sum payment, perhaps because their rating may be increased in the future.

Civilian Disability Programs

A wide variety of civilian programs provide benefits to disabled employees. Many of the programs are government-sponsored insurance. Some cover job-related injuries; others cover injuries or illnesses outside the workplace.

A common feature of most programs is that most are means-tested (i.e., payments are proportional to pre-injury earnings up to some cap) and payments end when a worker returns

⁴ The new law applied to veterans who received a nondisability retirement and have a disability rating of 50 percent or more. Veterans with a disability retirement are still subject to having their retirement benefits offset by their disability benefits.

to work. The premise of the programs is that they replace employment earnings while a worker is out of work.

Military compensation differs from these programs in several respects. First, servicemembers receive full military pay and benefits while recovering from an injury. If a member retires from the military with an injury, the benefit is based on a disability rating assigned using the VA's schedule. Second, military disability compensation for veterans continues for life, irrespective of civilian earnings.

Measuring Earnings Losses

We have longitudinal measures of labor force participation and civilian earnings for all active duty veterans leaving military service from 1994 through 2005. We compare the labor market outcome for all veterans from these cohorts with and without SCDs. We examine how these labor-market outcomes changed from year to year as veterans settled into the civilian labor market. This tracking is useful because, although new veterans (with and without SCDs) may have transition issues as they switch from military to civilian employment, these problems may abate as they adjust to civilian employment. In addition, veterans with SCDs may have different short- and long-term losses in the labor market. Our analysis includes a measure of civilian labor-market experience that separates the short- and long-term effects of SCDs on earnings.

Civilian labor-market opportunities vary systematically with an individual's education, age, race/ethnicity, and gender. Two broad classifications differentiate veterans from one another and are likely to shape their subsequent civilian labor-market opportunities. First, enlisted members have different backgrounds and experience than officers. Enlisted members generally enter the military with little or no college preparation. Officers generally have more professional or management responsibilities in the military than enlisted members, and this experience translates into different civilian opportunities after leaving the military. Second, many members serve one or two terms in the military and leave without earning a nondisability retirement. Nondisability retirees are older than other veterans and have considerably more military experience. The retirees enter civilian employment at midcareer and often have well-defined occupational skills. In contrast, most in the nonretiree group have often served on active duty only about four to six years, and these members have skills more suited for entry-level positions in the civilian labor market.

Based on these considerations, we divided veterans into five broad groups that are likely to characterize different portions of the civilian labor market: enlisted males (excluding enlisted nondisability retirees), enlisted females (excluding enlisted nondisability retirees), enlisted nondisability retirees, officer nondisability retirees, and other officers (e.g., officers leaving the military before reaching eligibility for a length of service retirement). Each group includes some veterans with SCDs who successfully completed their military service (some receiving a retirement based on length of service and some leaving before retirement eligibility). Disability retirees were grouped with enlisted males, enlisted females, and other officers, since these veterans were generally much younger than enlisted and officer nondisability retirees.

We examined how SCDs affected the civilian labor force participation and earnings of veterans by comparing the earning losses of veterans without SCDs to those of veterans with various disability ratings. We conducted separate analyses for each of the five groups. Each model contained disability ratings (VA ratings except for DoD retirees who did not apply to

the VA) and specific controls for separation cohort (FY1993 through FY2004) and years of civilian experience after leaving active duty. Subsets of specifications included controls for age at separation from active duty, education level, race/ethnicity, gender (where applicable), disability retirement or severance (where applicable), Armed Forces Qualification Test (AFQT) score (where applicable), service branch, participation in the Afghanistan or Iraq conflicts from 2001 to 2004, and whether the individual had a competitive promotion in the top 25th percentile of their entry cohort.⁵

Results

The earnings losses for most active duty veterans with SCDs are much smaller than the disability compensation provided by the VA or the corresponding component of DoD retirement pay. For example, veterans with a 30-percent disability are better off financially than other similar veterans with no SCD. The loss in civilian earnings for veterans with SCDs is more than offset by the size of disability payments, the tax-free status of those payments, and the availability of concurrent receipt for nondisability retirees with ratings of 50 percent or greater. The “extra” payments increase with disability ratings and are higher for enlisted veterans than for veteran officers. The disability payments associated with the VASRD are generally higher than the actual earnings losses for each rating level and across most types of veterans.

These overpayments might be interpreted as some QOL compensation for veterans with SCDs. This explanation has two weaknesses. First, current law dictates that disability payments should cover only average civilian earnings loss. Second, the disability schedule does not identify QOL in any way, so overpayments are unlikely to appropriately reflect QOL impairments across veterans. Adding QOL adjustments would require a new or revised disability schedule that measure how QOL was affected by each SCD. Some injuries (e.g., a facial scar) might be detrimental to QOL and have little effect on civilian earnings. Similarly, limited knee mobility from a SCD might have little effect on the civilian earnings of a veteran working as a computer programmer and have a large effect on the veteran’s recreational activities.

While compensation exceeds earnings loss for most veterans, some do suffer civilian financial losses from their SCD, and some veterans with medical separations fare worse than others with comparable ratings. The disability payments are proportionately less generous for former officers than for former enlisted members and are insufficient to offset earnings losses for some groups. This gap reflects the fact that veteran officers have higher civilian earnings than enlisted veterans, but the disability compensation schedule does not differentiate on prior rank. Junior officers with low ratings are worse off than comparable junior officers without SCDs, i.e., the disability compensation for these veterans is not sufficient to offset their earnings loss.

We found that veterans with disability separations from active duty have much lower earnings than do comparable other veterans with the same rating. For some reason, disability retirees and members with military severances have worse civilian labor-market outcomes than

⁵ Some controls are not relevant in some groups for various reasons. We have separate groups for enlisted males and females, so we do not control for gender in these models. The AFQT is only given to enlisted personnel, so AFQT controls are not used for officers. By construction, veterans with disability retirement or severance are grouped with enlisted males, enlisted females, and other officers. Therefore, these controls are only relevant for these groups.

do comparable veterans who successfully complete their term and leave active duty with similar SCDs.

We found substantial differences between labor market outcomes of nondisability retirees and veterans who completed their enlistment term and left before retirement eligibility. The incidence of SCDs is higher for nondisability retirees than for others who successfully complete their enlistments, but the comparable ratings have a smaller effect on nondisability retirees than on these other veterans. The higher incidence reflects both that the retiree has spent more time at risk of a SCD and that many health conditions are inherently tied to aging. The reasons for the better labor-market outcomes are less clear. Perhaps the older retirees work in less physically demanding jobs than the other veterans, so their SCDs have less effect on their job productivity. Alternatively, older veterans have a different mix of conditions than young veterans, and those conditions may relate to civilian opportunities differently. We did not have access to medical conditions, so we were unable to compare the mix of conditions across the two groups.

Finally, we looked at the timing of possible earnings losses as veterans transitioned to civilian employment after leaving active military duty. We found that veterans with SCDs fared no worse in the first two years of civilian employment than they did in subsequent years. While SCDs do reduce earnings opportunities, they do not disproportionately decrease them in the first few years of civilian experience. We also found that civilian labor-market outcomes were not very sensitive to increases in veteran ratings over the first several years of civilian experience.

Conclusions

Based on our findings, we strongly suspect that disability compensation for all cohorts of veterans with SCDs exceeds the average earnings losses for those veterans. Since we only look at earnings for 12 recent cohorts, it is possible that the “extra” compensation in these cohorts is entirely offset by “insufficient” compensation for veterans from earlier cohorts. Many veterans who left active duty before FY1993 are now retiring from the civilian labor force. Veterans with SCDs are better off financially than other veterans when they retire from the civilian workforce because they receive disability compensation with no current civilian earnings loss.

Perhaps disabled veterans’ payments compensate for QOL losses over and above the earnings losses associated with their injuries, but we are not convinced that the VASRD reflects QOL loss in any meaningful way. DoD and VA do not collect information on how SCDs impede the functionality of veterans. This type of information would be needed to quantify QOL losses and is not reflected in the VASRD.

We have several recommendations for policy.

Better Define Objectives of Disability Compensation

Congress and program managers should better define the goals and objectives of disability compensation. Policymakers and researchers struggle with what exactly “average earnings loss” means and the implicit intent of disability regulations. The regulations should spell out the purpose of the program and exactly what should be the basis of compensation awards. Perhaps this would include such things as compensation for QOL or loss of functioning.

Update VASRD

VASRD should reflect changes in modern medicine and the limitations of SCDs in the current labor market. The VA should explicitly measure how SCDs affect veteran functionality and integrate this information into the VASRD. If QOL or nonwork limitations are objectives of disability compensation, then these factors should be explicitly built into the VASRD along with earnings losses. Regular review of the VASRD is needed to ensure that the ratings are consistent with the goals and objectives of disability compensation.

Acknowledgments

We are especially grateful to Saul Pleeter of the Office of the Deputy Assistant Secretary of Defense for Military Personnel Policy for his support and encouragement of this study. Susan Hosek and Trey Miller from RAND provided comments on an earlier draft of this study. We are also thankful to Bill Carr, Curt Gilroy, and Virginia Penrod for their comments on the research.

Abbreviations

| | |
|-------|---|
| AFQT | Armed Forces Qualification Test |
| CRDP | Concurrent Retirement and Disability Payment |
| CRSC | Combat-Related Special Compensation |
| DMDC | Defense Manpower Data Center |
| DoD | Department of Defense |
| FY | fiscal year |
| IDES | Integrated Disability Evaluation System |
| LFP | labor force participation |
| LTD | long-term disability |
| MA | model averaging |
| PTSD | post-traumatic stress disorder |
| QOL | quality of life |
| SCD | service-connected disability |
| SMC | Special Monthly Compensation |
| SSA | Social Security Administration |
| SSDI | Social Security Disability Insurance |
| SSI | Supplemental Security Income |
| STD | short-term disability |
| VA | Department of Veterans Affairs |
| VASRD | Veterans Affairs Schedule of Rated Disabilities |

Introduction

Casualties in Iraq and Afghanistan have heightened concern about whether disability compensation and programs provide adequate support for military veterans. Buddin and Kapur (2005) showed that military retirees generally receive adequate military disability compensation to offset their service-connected earnings losses in civilian employment. That study did not, however, assess how well other disabled veterans (veterans who are not eligible for military retirement income) are doing in civilian employment after leaving the military. This population consists of two groups: veterans who are discharged from the military for a service-connected disability (SCD) and veterans who have a SCD at separation but are not discharged specifically because of the disability. The labor-market success of these veterans may differ from that of military retirees, because these veterans are much younger and have less experience in the military or in any labor market.

Most servicemembers assigned to Iraq and Afghanistan are junior personnel who are likely to leave the military before completing 20 years of service and earning a military retirement. An important issue for current disability policies is whether current disability compensation and other programs are adequate to ensure that these veterans are appropriately transitioned into the civilian economy after leaving the military and whether disability compensation is adequate to offset possible earnings losses associated with a SCD.

Both the Department of Defense (DoD) and the Department of Veterans Affairs (VA) pay disability compensation to military members who have been injured or whose injuries were aggravated while serving on active military duty. The DoD program compensates individuals who are unable to continue on active duty because of a SCD; they receive a disability separation from active duty. Most veterans in the VA program had active duty separations that were not disability-related (nondisability separations) but have a SCD at separation (or later) as a result of an injury during their active duty tour. Some veterans with a disability separation apply for disability benefits from the VA, and these benefits offset DoD payments.

SCDs are broadly defined for active duty personnel, so the injury or condition may not necessarily be related to military training or deployment. For example, servicemembers who are injured in an off-duty automobile accident are eligible for disability compensation. The key factors in determining the eligibility for compensation for a SCD are that the condition is related to time served on active military duty and is not self-inflicted.¹

¹ In the past couple of years, VA physicians have begun reviewing the ratings of members declared unfit by Physical Evaluation Boards. This new policy is designed to create more consistency between DoD and VA ratings for members leaving active duty, but the effects of the policy have not yet been evaluated.

VA disability compensation is based on the Veterans Affairs Schedule of Rated Disabilities (VASRD). Military veterans receive medical evaluations and are assigned disability ratings in 10-percentage-point intervals based on their medical conditions or limitations. By federal regulation, “the percentage ratings represent as far as can practicably be determined the average impairment in earning capacity resulting from such diseases and injuries and their residual conditions in civil occupations.”²

The VASRD does not explicitly make allowances for pain and suffering associated with a military-related disability unless these factors in some way affect civilian earnings. Pain and suffering may have an indirect effect on civilian earnings if disabled individuals have more frequent or extended unpaid absences from work for health reasons. If so, these absences would reduce earnings and be reflected in the rating schedule.

The DoD disability compensation system differs from the VA system in three key ways. First, the services discharge an active duty member if he or she is physically unfit to perform his or her duties; they are unconcerned about civilian earnings opportunities. Unfit members are assigned a VASRD rating based solely on the condition that makes them unfit to remain on active duty and not on other conditions that might affect their rating on the VASRD. Second, DoD retirement compensation is based on time served and rank as well as the rated SCD. Third, disability severance is based on rank and time served, but the annuity is the same for different ratings levels.

This research examines the labor force participation (LFP) and earnings of veterans in each disability ratings category³ relative to comparable other veterans who do not have a SCD. We also separate veterans into broad groups depending on whether the veteran was in the enlisted or officer ranks and whether the veteran was eligible for military retirement benefits. A priori, we expect that ratings may have different implications on civilian labor-market outcomes across these groups, because veterans enter the civilian workforce at different points in their careers (e.g., SCDs may limit young veterans more or less than older veterans).

Our analysis focuses on recent cohorts of veterans who left active military service between FY1993 and FY2004. The labor-market experiences of these cohorts are an indication of the conditions and problems that may face veterans returning from the Iraq and Afghanistan conflicts. We track their civilian earnings for up to 12 years, from 1994 through 2005.⁴ We follow earnings from these cohorts and compare the labor-market success of veterans with and without SCDs.

This research addresses four questions:

1. How do civilian LFP and earnings vary with SCD rating? We will examine whether disability compensation is sufficient to offset civilian earnings losses.
2. Are earnings losses larger for some groups of veterans than for others? Veterans vary substantially by age at military separation, education, and other factors, so earnings losses might be adequate for some groups and inadequate for others.

² 38 CFR §4.1 (Essentials of evaluative rating) (2010).

³ Most veterans with SCDs were assigned ratings by the VA. DoD separations are initially assigned ratings by the DoD, but many of these veterans later apply for benefits from the VA and are reassessed. These issues are discussed in the next chapter.

⁴ The analysis does not track more-recent separations and earnings of veterans, because we were unable to obtain civilian earnings data for years beyond 2005.

3. Do earnings losses differ for those in the DoD and VA compensation program? Christensen et al. (2007) argued that DoD underrates disabilities relative to the VA. If so, then we would expect veterans in the DoD program to have greater earnings losses than veterans with the same rating in the VA program.
4. How do civilian earnings losses vary over time? Disabled veterans might have more difficulty than others in finding a good civilian job match. If so, they may have large initial earnings losses (i.e., spend more time finding a civilian job or have lower initial wages) than other veterans, but these problems may abate after an initial transition period. Disabilities might hamper a veteran's transition to civilian employment and have a smaller effect on subsequent labor-market success. In addition, some SCDs might become more limiting over time, so initial market outcomes might provide a distorted indication of how SCDs are affecting earnings losses.

The remainder of this monograph is divided into four parts. Chapter Two provides background on military and civilian disability programs as well as a review of previous research on earnings losses associated with SCDs. Chapter Three gives a description of our data and the methods used in our analysis. Chapter Four presents the results. Chapter Five gives our conclusions and recommendations.

Background on Disability Compensation Programs

This chapter explains the workings of the VA and DoD disability compensation programs. These programs have faced considerable controversies in recent years and have been modified to address some of these concerns. The chapter also includes a discussion of civilian disability programs and contrasts those programs with the programs for veterans with SCDs.

VA Disability Compensation

Most disabled veterans receive compensation benefits from the VA, although a few receive payments directly from DoD (see the discussion later in this chapter). The ratings are based on a medical evaluation of each member. Initial medical evaluations are done at the time of separation from active duty as part of the discharge process. The servicemember can request a reevaluation by the VA after separation. The evaluations are based on the VASRD. The VASRD translates specific medical conditions into disability percentages in 10-percentage-point intervals (CFR, 2010; Department of Defense, 1996).¹

The earnings capacity criterion (see 38 CFR 4.1) means that compensation should be based on a comparison of what an individual could have earned in the absence of a disability and what he or she could earn with the disability. For the expositional purposes of this research, we call this loss in earnings capacity an *earnings loss*.

An alternative possible criterion for computing disability payments would be to compare what an individual could have earned in the absence of a disability with what that individual actually earns after an injury. The distinction between this absolute earnings loss and a loss of earnings capacity is subtle—the absolute earnings loss may exceed the loss of earnings capacity if an individual reduced his or her labor-market work after an injury by more than would be “necessary.” For example, if an injury severely impairs civilian wage opportunities, the individual may leave the labor force or reduce the amount of work, especially if military retirement and disability income along with savings and spousal income provide sufficient funds for living. The *absolute* earnings loss for a nonworking disabled retiree would then be the average individual earnings of similar nondisabled retirees (some working and some not). In contrast, the loss in the earnings capacity associated with the disability would be the difference between the earnings of a nondisabled retiree and the potential earnings of a similar disabled retiree

¹ In addition to disability compensation, disabled veterans are eligible for a variety of health benefits and rehabilitation services. This study examined only disability compensation and not the full range of programs for disabled veterans.

who had actually worked—or at least had worked as much as his or her physical disability allowed.

Table 2.1 shows that over 3 million veterans receive benefits from the VA, and the annual budget outlay is about \$34 billion. Monthly payments depend on the extent of physical impairment as measured in 10-percentage-point increments. Compensation ranges from about \$1,500 per year for a 10-percent rating to about \$37,000 per year. The payment schedule provides small increments in payments for veterans with a spouse or dependent children.

The VA compensation program has grown substantially in recent years. In 2001, about 2.3 million veterans received benefits, compared with 3.1 million in 2009. The full reasons for the sharp increase are unclear, but a recent study (Duggan, Rosenheck, and Singleton, 2010) argues that relatively narrow changes in eligibility have had a large effect on enrollment in the VA disability program.² In 2001, the VA responded to a study by the Institute of Medicine (2000) by adding diabetes to the list for which Vietnam veterans could qualify for a SCD. Duggan, Rosenheck, and Singleton (2010) found that this policy change increased the number of Vietnam veterans receiving VA compensation by 8 percent and that an additional 3 percent of Vietnam veterans received an increase in benefits. The combined effects of this policy change increased the annual cost of VA disability compensation by 11 percent.

Finally, Table 2.2 lists the most common SCDs among veterans who recently started receiving VA benefits. Ten disabilities constitute about 41 percent of rated SCDs. The list shows that common disabilities cover a wide range of conditions. We do not focus on individual SCDs in our analysis and did not have access to individual disability information. Rather, our focus in this study is on how well the ratings associated with SCDs predict civilian labor-market outcomes.

Several aspects of the VA disability program have faced scrutiny in recent years. These criticisms are discussed in the remainder of this section.

Table 2.1
All Veterans Receiving Disability Compensation in FY2009

| Disability Rating (%) | Number of Veterans | Total Annual Amount (\$) | Average Annual Amount (\$) |
|-----------------------|--------------------|--------------------------|----------------------------|
| 0 | 12,857 | 12,542,364 | 976 |
| 10 | 785,540 | 1,168,066,254 | 1,487 |
| 20 | 445,833 | 1,317,403,230 | 2,955 |
| 30 | 362,525 | 1,820,773,200 | 5,022 |
| 40 | 302,686 | 2,198,221,896 | 7,262 |
| 50 | 196,561 | 2,010,469,674 | 10,228 |
| 60 | 231,341 | 3,687,150,138 | 15,938 |
| 70 | 211,819 | 5,032,881,726 | 23,760 |
| 80 | 155,767 | 4,133,833,168 | 26,539 |
| 90 | 86,119 | 2,526,097,271 | 29,333 |
| 100 | 278,604 | 10,195,512,294 | 36,595 |
| Total | 3,069,652 | 34,102,951,214 | 11,110 |

SOURCE: Department of Veterans Affairs, 2009.

² In recent years, congressional legislation has modified disability compensation in ways that may have increased the size of the VA disability compensation program. We discuss those changes later in this chapter.

Table 2.2
Common SCDs for Veterans Who Began Receiving Benefits in 2009

| Disability | Number of Veterans | Percentage of Total |
|-------------------------------------|--------------------|---------------------|
| Tinnitus | 77,486 | 9.5 |
| Hearing loss | 54,450 | 6.6 |
| Post-traumatic stress disorder | 33,129 | 4.0 |
| Lumbosacral or cervical strain | 30,086 | 3.7 |
| Tendon inflammation | 29,079 | 3.6 |
| Limitation of flexation, knee | 27,578 | 3.4 |
| Degenerative arthritis of the spine | 25,682 | 3.1 |
| Diabetes mellitus | 23,508 | 2.9 |
| Scars, general | 20,089 | 2.5 |
| Traumatic arthritis | 18,334 | 2.2 |
| Total—most prevalent disabilities | 339,421 | 41.5 |
| Total—all disabilities | 818,954 | 100.0 |

SOURCE: Department of Veterans Affairs, 2009.

VASRD Is Out of Date

A key criticism of the VASRD schedule is that the schedule was developed in 1945 and is based on how an injury affects the ability of a veteran to perform manual labor (GAO, 2002). Changes in the workplace have reduced the physical demands of most jobs, and the mix of labor-market activities has changed considerably in the past 65 years. In 1945, 44 percent of the nation's workers were employed in mining, construction, and manufacturing industries, compared with only 18 percent in 2000 (GAO, 2002). Physical disabilities that would limit a veteran's productivity in the physically demanding manufacturing jobs of the 1950s may be less restrictive in the current workplace, which is dominated by service- and information-sector jobs.

A more general issue for all disability systems has been the medical and technological innovations in treating injuries as well as dramatic changes in the nature of the workplace. New rehabilitation efforts have been very effective—for example, a young Army captain who lost a foot in Iraq has recently been approved for return to combat duty in the field (O'Driscoll, 2004). Injuries that would greatly impede productivity and earnings in a marketplace that was dominated by agricultural or manufacturing jobs may be less detrimental in a service- and knowledge-based economy. It is unclear whether the military disability system has adequately adjusted to the opportunities available to disabled veterans.

The Institute of Medicine (2007) argued that the VASRD is tied to the needs of the World War II generation and that occasional updates have been insufficient to keep up with modern medical knowledge. It argues for a comprehensive overhaul of the rating schedule that relies on modern measures of functional impairments associated with particular SCDs. In particular, measures of these impairments are important for evaluating key injuries from recent conflicts, such as traumatic brain injury and post-traumatic stress disorder (PTSD). These types of injuries may have little direct effect on a veteran's ability to perform specific physical tasks, but they may impede the veteran's ability to function in a modern workplace.

“Average Impairment” May Shortchange Some

A potential limitation of this averaging approach is that the mix of earnings potential of members with a common injury is quite broad (Buddin and Kapur, 2005). For example, a private who loses a foot is entitled to the same benefits as a colonel with the same injury, irrespective of how the injury affects their earnings potential in the civilian sector. The payments are intended to reflect the average earnings loss for all veterans with a similar injury, but the formula neglects such factors as training, experience, and pre-injury earnings, which are likely to have substantial effects on an individual’s earnings in the workplace. Experienced, well-educated veterans with managerial experience may have much better labor-market alternatives than young, low-wage veterans, but the formula awards do not reflect these differences in civilian earnings.

The computation of the appropriate “average” is also complicated by the fact that many veterans left active duty at a young age and often work in civilian occupations that are weakly connected with their military jobs. Past earnings provide a useful indication of how much a 30-year-old civilian would have earned in the absence of a workplace injury. The counterfactual is more difficult to construct for a 20-year-old veteran with a SCD, because he or she has no established career path and is transitioning from military to civilian employment.

Since this study focuses on recent cohorts of veterans, it is possible that gaps in average earnings losses for these cohorts are counterbalanced by disability payments to veterans who left active duty prior to FY1993. For example, we may find that disability payments exceed earnings losses for recent cohorts and are lower than earnings losses for Vietnam veterans who left active duty in the 1960s and 1970s. The VASRD focus on “average impairment” allows for this type of intergenerational imbalance in how earnings losses are offset.

A priori, we expect that VA disability payments become relatively generous as veterans begin to retire from the civilian labor market. When veterans with SCDs leave civilian employment and have no civilian earnings, they continue to draw VA disability payments for life. After they retire, veterans with SCDs will be better off financially than comparable other veterans without SCDs, because they continue to draw VA disability compensation and have no current loss in civilian earnings.

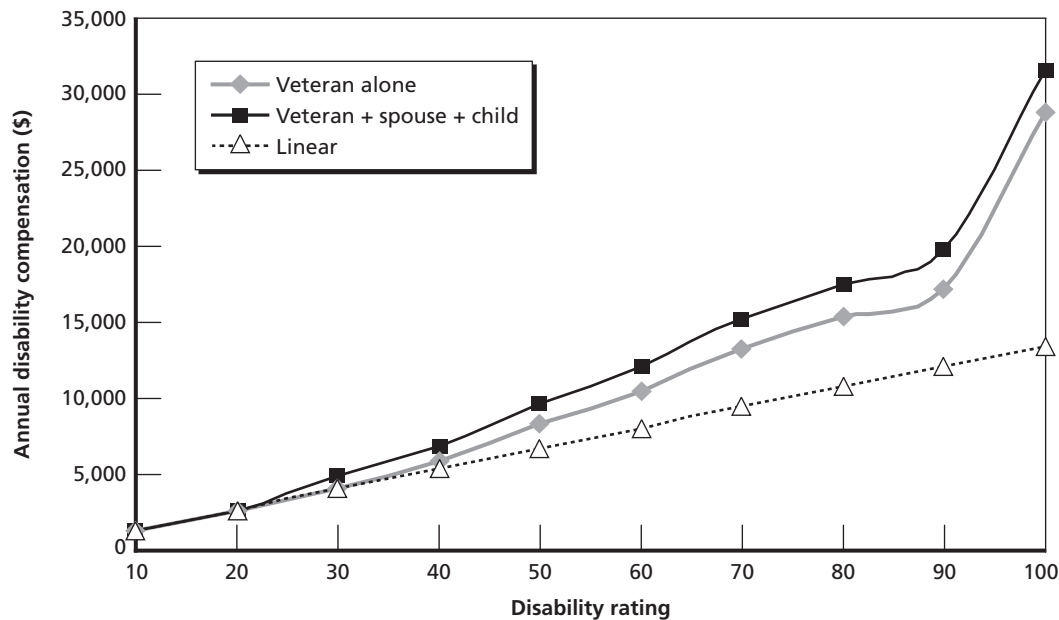
This “extra” payment to veterans as they retire from civilian life is important today, because about one-third of VA disability beneficiaries are Vietnam veterans who are at or near their civilian retirement age. A strict interpretation of “average loss” would require younger veterans to receive less than their current labor-market loss to offset the fact that these older veterans receive more than their civilian labor-market loss after civilian retirement. It seems unlikely that this type of cross subsidization is the intent of disability compensation rules.

VASRD Includes Quality of Life Benefit

Several recent studies have argued that the VASRD implicitly rewards disabled veterans for their loss of quality of life (Economic Systems, 2004; Christensen et al., 2007; and Institute of Medicine, 2007). A key element of this argument is that the VASRD compensation schedule is nonlinear. If the rating percentage represented the average loss for each rating group, then the disability compensation should be proportional to each rating group.

Figure 2.1 shows that the compensation schedule is inconsistent with this proportionality rule. In 2005, compensation ranged from \$1,344 per year for a single veteran with no dependents and a 10-percent rating to \$28,716 per month for a similar veteran with a 100-percent rating. The schedule provides small incremental benefits to veterans based on their marital status and number of children. At ratings of 10 and 20 percent, veterans receive no extra com-

Figure 2.1
Annual VA Disability Compensation in 2005, by VASRD Disability Rating



SOURCE: Department of Veterans Affairs, 2005.

RAND MG1098-2.1

compensation for dependents. The extra dependents award is about \$800 per year for those with a 30-percent disability rating; it grows to about \$2,000 per year for a 70-percent disability and \$2,800 per year for a 100-percent rating.

If this represented the average earnings loss associated with each disability rating, then the compensation amount for a 100-percent disability should be ten times that of a 10-percent disability. In fact, the schedule is not linear. Rather, compensation amounts grow disproportionately with the rating amount. The gap begins at around a 50-percent rating, widens with ratings through 90 percent, and rises sharply at 100 percent. A linear extrapolation of disability payments from low levels to the 100-percent rating suggests an annual disability compensation of \$13,000, compared with the actual payment of \$29,000 for a single veteran and \$32,000 for a veteran with dependents. Alternatively, if a veteran with a 10-percent rating received payments that were 10 percent of the maximum payment, he or she would receive \$2,900 to \$3,200 annually compared with only \$1,300 actually paid.

This nonlinearity argument has several weaknesses, however. First, the nonlinearity may simply mean that the VASRD ratings percentages are poorly aligned with civilian earnings losses. A priori, this explanation has considerable merit since the ratings schedule has been only nominally linked to civilian earnings until the past few years. In addition, the slow updating of the VASRD means that many SCDs may be classified in the wrong rating, i.e., the limitations from a SCD may be reduced relative to the schedule if new treatment methods are introduced. Second, the VA collects little (if any) information on how SCDs affect functionality (Institute of Medicine, 2007). Without any specific measures, any quality of life (QOL) adjustments in the VASRD would be arbitrary and unlikely to reflect actual changes in QOL itself. Third, ratings assignments are based on the physical job requirements in the VASRD, and those

requirements are unlikely to be consistent with corresponding changes in QOL. For example, two injuries could have similar effects on earnings losses and quite different effects on QOL.

If QOL is a major factor in VASRD, then earnings losses will provide little indication of the adequacy of compensation, since the losses reflect only the contribution of SCDs to veterans' income security. Adding QOL adjustments would require a new or revised disability schedule that measure how QOL was affected by each SCD. Some injuries (e.g., a facial scar) might be detrimental to QOL and have little effect on civilian earnings. Similarly, limited knee mobility from a SCD might have little effect on the civilian earnings of a veteran working as a computer programmer and have a large effect on the veteran's recreational activities.

Special Monthly Compensation (SMC) is also used as an indication that VA compensates for reduction in QOL from SCDs (Economic Systems, 2004). SMC is a supplemental payment to veterans with severe disability such as the loss of a hand or foot, blindness, or deafness.³ The VA pays SMC payments to about 8 percent of veterans who receive disability compensation. These payments are over and above the regular payments in the VASRD. If the VASRD fully reflected the earnings losses associated with each SCD, then the SMC would be "extra" compensation relative to what the veteran would have earned in the absence of the SCD. Some legislative discussions of SMC do suggest that lawmakers intend these payments as repayment for pain or suffering or QOL and not solely as reimbursement for earnings losses (Economic Systems, 2004).

While SMC has some elements of a QOL reimbursement, the program may be interpreted in other ways. First, SMC only applies to a small number of SCDs, and the VA collects no specific information on how these injuries affect veteran functioning. SMC applies to only a small number of well-defined serious SCDs. If lawmakers wanted to offset QOL, they could enact a new mandate that explicitly recognized QOL impairments and linked the measurement of those impairments to compensation. Second, SMC may be a patchwork that recognizes the limitations of the VASRD and is not a specific entitlement to QOL compensation. If the VASRD is out of date, as many argue, the SMC may be a program to offset earnings losses from some serious SCDs that are not appropriately captured in the VASRD.

In our analysis, we examine whether civilian earnings losses do increase proportionately with disability rating and whether the magnitude of compensation payments offsets earnings losses for recent military veterans. We have no specific measures of veteran QOL, so we are unable to determine whether disability compensation is adequate to offset reductions in QOL from SCDs. We leave QOL issues for future researchers to study and for lawmakers to ultimately resolve.

Disability Compensation "Crowds Out" Retirement Compensation

Until recently, retirees received the maximum of retired pay or disability pay. Most retirees were eligible for more retirement pay than disability pay, so the disability pay did not increase their monthly income from the government at all. Only for large disability ratings did disabled retirees receive "extra" money from the disability pay and then only the difference between retirement pay and disability pay. Since retirement pay was offset by disability pay in this manner, many retirees had a reduced incentive to apply for VA benefits. Even when retirement benefits are completely offset by disability payments, however, the retiree still benefits from the

³ SMC is documented at 38 CFR §3.350 (Special monthly compensation).

tax advantage of disability payments (which are untaxed by state or the federal government) compared with retirement payments (which are taxed).

Veterans groups have long argued that veterans were entitled to both full retirement pay and VA disability compensation. The issue of receiving both full retirement pay and disability compensation is often referred to as “concurrent receipt.” In 2003, some retirees began to receive added disability payments under the Combat-Related Special Compensation (CRSC) program. The program initially allowed concurrent receipt for injuries that could be directly linked to combat operations, provided that the relevant SCD was rated at 60 percent or above or at 10 percent or more for veterans who had received the Purple Heart. These conditions were relaxed in 2004 to include all combat-related injuries. The program was aimed at retired veterans with a nondisability separation and was extended to disability separations in 2008.⁴

In 2003, Congress passed Concurrent Retirement and Disability Payment (CRDP) legislation, which phased in concurrent receipt for servicemembers with a 50-percent or greater disability rating. The new payments began in 2004. They phase in the disability payments at an accelerated rate over a ten-year period. Nondisability retirees with ratings of less than 50 percent remain subject to the offset rules. In addition, medical retirees are subject to the offset, so only nondisability retirees with ratings of 50 percent or greater are eligible for concurrent receipt.

CRSC is tax-free, CRDP is not. CRDP is retired pay and subject to division under a divorce decree; CRSC is not. Member may choose CRSC or CRDP during open season.

DoD Disability Compensation

DoD provides disability-related compensation for members with a SCD who are determined to be unfit to perform their military duties. SCDs are measured through medical evaluations. SCDs are rated according to the VASRD, but the service ratings reflect only the rating of the condition that makes the member unfit for remaining on active duty.⁵ These members receive either a disability severance or a disability retirement.

The DoD program is much smaller than that of the VA. In 2009, DoD provided disability retirement benefits to 91,000 veterans at a cost of \$1.4 billion (Department of Defense, 2010). In addition, DoD provides disability severance payments of about \$128 million to 7,500 veterans each year.

Disability severance targets members who are unfit to continue on active duty but whose disability ratings are less than 30 percent. In the period covered by our data, severance pay was a lump sum that equaled monthly base pay multiplied by two times the number of years

⁴ As discussed below, some veterans have disability retirements from active duty, because they had a SCD that made them unfit to continue on active duty. Most retirees receive a nondisability retirement when they complete a specific length of military service (generally at least 20 years). Many nondisability retirees have SCDs, but they are able to successfully complete their military service.

⁵ The military evaluation is protracted, with many opportunities for appeals and reassessments. The member continues to draw full military pay and benefits during the process, however, in contrast to civilian employees, who receive only a portion of their pay while recovering from job-related injuries. Military members do not enter the medical evaluation process until they have completed a course of treatment for their injuries. The review itself may then result in further delays as the board assesses and perhaps waits until the long-term effects of the injury are clear, so the board can assess the members’ fitness for service.

of service (up to a maximum of 12 years). Under the provisions of a new law passed in 2008, minimum severance was set at 12 months of pay for combat zone injuries and 6 months of pay for other injuries. In addition, maximum severance pay was capped at 38 months of basic pay (i.e., two times 19 months of service). Severance payments are unrelated to specific disability ratings—the payment is identical for SCDs of 0, 10, and 20 percent. About 7,500 members received a disability severance in 2005, and the average age at separation for these members was 26.

Disability retirees have a disability rating of 30 percent or higher. The retirement payment is based on the higher of the disability rating percentage multiplied by retired monthly base pay or years of service multiplied by 2.5 percent of retired monthly base pay.⁶ The maximum allowable percentage of retired base pay for medical retirement is 75 percent. For example, suppose that an injured member had a 30-percent disability rating and had served for 10 years. Then, the first payment scheme would provide for a monthly retirement pay of 30 percent of retired monthly base pay, whereas the second scheme would provide for 25 percent of retired monthly base pay (10 years \times 2.5 percent). The member is entitled to the maximum of the two payment schemes, which, in this instance, is 30 percent of retired monthly base pay. In 2005, about 3,000 military members were given a medical retirement and the average medical retiree received about \$13,600 per year. About 15 percent of these retirements were combat-related.

Unlike VA compensation, the DoD program is tied to military pay and experience. Disability severance payments are not directly linked to the SCD level at all. This suggests that the severance payments are primarily compensation for displacement from the military job rather than compensation for the SCD itself. The disability retirement program does consider the magnitude of the rating, but the payments are also linked to time in service and grade. This suggests that retirement pay partially reflects contributions to the military retirement system.

Many disability retirees apply for VA disability payments. Jennings (2003) argues that this switch has been driven by a change in the tax status of disability retirement annuities. Historically, disability retirement payments were partially or totally tax-free. Disability retirees had little reason to seek VA compensation unless (a) their condition changed, (b) they expected a high VA rating (perhaps due to multiple SCDs), or (c) they wanted to use a VA hospital. For members entering active duty after 1975, disability retirement funds were taxable unless the injuries were awarded for combat or combat-related injuries. Jennings (2003) suggests that the tax-free status of VA funds provides a powerful incentive for disability retirees to apply for VA disability compensation. She found that about 75 percent of disability retirees received VA disability benefits.

Many severance cases also apply to the VA for compensation benefits. These veterans may receive a higher rating from the VA because the VA evaluates all their SCDs. In addition, VA compensation payments are tax-free whereas DoD severance amounts are generally subject to taxes. Finally, the VA payments continue for life and may be worth more than the simple lump sum awarded by DoD. When switching to the VA, the veteran must repay the severance amount unless the SCD occurred in a combat zone or in combat-related operations.

Christensen et al. (2007) argued that DoD underrated injuries to veterans with disability severance. They found that most of these veterans applied for benefits from the VA and repaid

⁶ The retired monthly base pay for retirees who entered before September 8, 1980, is based on their highest monthly pay. The retired monthly pay for retirees who entered after September 7, 1980, is based on the average of their monthly pay over the last three years.

their severance amount to become eligible for VA disability compensation. A key factor in this transition is that the DoD was rating members only on the specific condition that made them unfit to serve on active duty, whereas the VA was rating veterans on all their SCDs. This difference meant that about 70 percent of veterans with disability severance shifted to the VA system.

In 2007, DoD and VA began pilot testing of the Integrated Disability Evaluation System (IDES). The program integrates many components of the DoD and VA evaluation processes. Under IDES, members in the DoD disability evaluation system simultaneously receive a DoD rating based on a SCD that might make them unfit for active duty and a second rating for all SCDs that would form the basis of VA disability benefits (GAO, 2010). If members receive a disability retirement or severance, IDES is designed to speed up VA processing and expedite the receipt of benefits for members who receive disability separations.

In 2011, DoD planned to implement the IDES program militarywide. DoD expects that it will take about two years to make the full transition from the old system to the new. A key goal of the new system is to accelerate the rate at which veterans with SCDs begin receiving benefits. IDES shows promise for improving the transition of veterans to civilian life, but it is unclear whether the program will speed up compensation payments (Serbu, 2011).

Whatever the merits of the IDES initiative, the veterans in our analysis left the military before IDES was started. As in earlier studies, we find in Chapter Four that the vast majority of veterans with disability retirement or severance apply for VA disability compensation soon after they leave active duty.

Civilian Disability Programs

Worker disabilities in the civilian sector are covered by a patchwork of public and private programs: workers' compensation, short-term disability insurance (STD), long-term disability insurance (LTD), Social Security Disability Insurance (SSDI), Supplementary Security Income (SSI), and liability insurance. Workers' compensation is a series of state programs that provides income replacement to individuals injured on the job. Often, employers also offer STD policies to provide salary replacement for disabilities that extend beyond the standard employee sick-leave provisions. After STD benefits are exhausted, LTD benefits commence if they are available. Some employer-provided pension plans also have disability provisions. SSDI and SSI are governmental programs that are also designed to provide income to the disabled or the indigent. Eligibility for SSDI is based on firm and employee contributions to Social Security taxes; SSI is a means-tested program for low-income individuals with disabilities. Aside from workplace programs for disabilities, disability payments may also be made by auto liability insurance, medical malpractice insurance, and other liability policies, but these types of payments are not directly comparable with the work-related payments in military disability compensation. In this section, we provide a brief overview of these programs in order to compare the military disability system to the existing civilian programs.⁷ The final portion of the section reviews civilian literature on how disability insurance policies affect labor-market outcomes for disabled workers.

⁷ Much of the material for this subsection is drawn from Buddin and Kapur (2005).

Workers' Compensation

Workers' compensation was enacted in 1908 to cover certain federal civilian workers. By 1920, all but seven states had enacted workers' compensation laws. Today, each of the fifty states and the District of Columbia has its own program (Williams et al., 2004). Workers' compensation is an important source of support for disabled workers. The workers' compensation program paid \$53.4 billion in compensation benefits in 2002. Of this total, \$24.3 billion was for medical care and \$29.2 billion was for cash benefits.

Workers' compensation pays for medical care for work-related injuries beginning with the date of injury, and it also pays cash benefits. Workers are compensated regardless of fault or blame, with the exceptions of willful misconduct, intoxication, and gross negligence. The program covers almost all (87 percent) wage and salary workers. The program pays temporary disability benefits after a waiting period of three to seven days; and it pays permanent partial and permanent total disability benefits to workers who have lasting disabilities caused on the job. Temporary total disability cases make up 85 percent of indemnity claims. Workers who are classified with permanent partial disability constitute most of the indemnity costs. Workers who are classified as permanently partially disabled receive temporary total disability payments until they reach the point of maximum medical improvement (that is, they are not expected to recover any further from their disability). Permanent partial disabilities are classified as scheduled or nonscheduled. Scheduled injuries include injuries to limbs or organs. Nonscheduled injuries cover disabilities such as head, back, and nervous system injuries (Williams et al., 2004).

Workers' compensation benefit provisions vary among states. Usually, benefits cover two-thirds of previous earnings, although earnings levels are generally capped at a rather low level. In addition, some states have benefit maximums that include weekly maximums and/or time limits on benefit receipt. States differ in their methods for determining whether a worker is entitled to permanent partial benefits and if so, the degree of partial disability and the amount of benefits to be paid (Barth and Niss 1999). The extent of partial disability can range from less than 5 percent to 99.75 percent of total disability. Permanent partial disabilities account for 33 percent of cases that involve any cash payments and for 62 percent of spending (Williams et al., 2004). In most states, benefits for scheduled injuries are enumerated on a predetermined chart. Benefits for nonscheduled injuries are calculated as a percentage of previous earnings.

Table 2.3 shows a comparison of workers' compensation and military disability across several key dimensions. The military system is notably more generous in compensating for the immediate aftermath of an injury. Military members continue to receive full military pay and benefits while recovering from an injury, whereas civilian employees receive only about two-thirds of their earnings under workers' compensation (subject to some maximum earnings). In addition, military members who retire with a military-related injury or are medical retirees continue to draw disability benefits even if they are fully employed by the civilian sector. In contrast, civilian workers' compensation is conditioned on the inability of the individual to work, and compensation ends when the individual returns to work.

Short-Term Disability Benefits

STD benefits provide for salary replacement, most often partial pay, for a 6- to 12-month period. Benefits are paid either as a percentage of employee earnings, such as 50 percent of pre-disability earnings, or as a flat dollar amount. STD benefits can vary by the amount of pre-disability earnings, length of service with the establishment, or length of disability.

Table 2.3
A Comparison of Military Disability and Civilian Workers' Compensation

| Criterion | Military Disability | Workers' Compensation |
|---------------------|---|--|
| Benefit calculation | Member receives full military pay and benefits while recovering from an injury. If member retires from the military with an injury, the benefit is based on disability rating assigned using the VA's schedule. | Benefit based on wage loss (usually 2/3 of actual wages lost (earnings are capped) |
| Eligibility | Not contingent on where injury occurred or ability to work | Contingent on work-related injury and inability to work |
| Rehabilitation | Vocational rehabilitation available, but not mandatory for eligibility | Eligibility often contingent on participation in rehabilitation |
| Benefit limit | No limit on total dollar amount or time period of benefit eligibility | Limits on maximum weekly benefits and length of eligibility |
| Program goal | Active-duty members receive full pay while recovering from injury | Workers' compensation is reimbursement for lost earnings during rehabilitation |

Information on firm disability plans is drawn primarily from three recent surveys.

- *National Compensation Survey: Employee Benefits in Private Industry in the United States, 2002–2003*. This Bureau of Labor Statistics survey (BLS, 2005) collected data from nearly 3,000 firms that employ nearly 103 million workers.
- *Employer's Time-Off and Disability Programs*. This survey is based on responses from 472 employers (private and government) with 100 or more employees (Mercer Human Resource Consulting, 2004).
- *Survey for Human Resource Management (SHRM) 2004 Benefits Survey Report*. This survey is based on data collected from 453 human resource managers in private firms (Burke, 2004).

The BLS survey is much more comprehensive in coverage than the other two surveys, but its information about details of disability plans is much more limited than in the other surveys. BLS data show that 39 percent of workers had access to STD plans (BLS, 2005). STD plans were available to 53 percent of workers earning \$15 per hour or more but only to 29 percent of low-wage workers. Access to STD plans was much more common in unionized, goods-producing firms and firms with at least 100 employees than in nonunionized, service-sector jobs in small firms. Nearly all workers with access to STD plans participate in those plans (BLS, 2005).

About 80 percent of the firms in the Mercer Survey (2004) provide employees with a STD plan to cover disabilities and illnesses that are longer than approximately one week.⁸ More than half of employers (56 percent) impose a waiting period before providing benefits—the average length of time is 4.5 months. For the majority of employers (62 percent), STD benefits cover non–work related disabilities only. For 31 percent, the plan supplements workers' compensation so that the wage replacement between occupational and nonoccupational dis-

⁸ The STD access rates in the BLS (2005) and Mercer Survey (2004) are quite different—the BLS shows that 39 percent of employees have access to STD plans compared with the Mercer Survey finding that 80 percent of its surveyed firms offer STD plans. In large part, the gap reflects the fact that Mercer surveyed only employers with 100 or more employees. These larger firms are much more likely to offer STD plans than small firms. In the BLS survey, over half of all employees work in firms that employ less than 100 workers.

abilities is the same. About 40 percent of employers provide employees with full pay up to the maximum duration of disability absence specified in the plan. However, it is more common for employers to pay a fixed percentage of salary as STD benefits. The majority of employers (63 percent) also did not pay STD benefits for the first seven working days of the disability. The average maximum paid benefit duration is six months. Detailed tabulations of several STD plan features are shown in Table 2.4.

The SHRM survey found that 81 percent of employers offered STD policies. Larger firms were more likely to offer short-term disability policies: Seventy-five percent of firms with fewer than 100 employees, 82 percent of medium sized firms (100–499 employees), and 91 percent of large firms (500 or more employees) offered STD policies. STD rates differed by industry, with high-tech industries having the highest rate at 95 percent and nonprofit services and government having the lowest rates at 68 percent. However, none of the differences by industry were statistically significant. The offering of short-term disability policies has been somewhat stable over the years (Burke, 2004) (Figure 2.2).

In addition, an older study (Houff and Wiatrowski, 1989) comparing short-term disability offerings of state and government employers to those of the private sector showed that government employees tended to have fewer days of STD leave available than in the civilian sector. However, the earnings replacement under the STD plans was more generous for government employees than for private-firm employees. At five years of service, state and local government employers offered an average of 46 days of STD leave with 61 percent earnings replacement. Teachers had somewhat less generous benefits—25 days with 76 percent earnings replacement. Police and firefighters had 46 days of STD leave with 67 percent earnings replacement. In comparison, civilian employers had 120 days of STD leave with 58 percent earnings replacement.

Long-Term Disability Benefits

LTD benefits provide a monthly cash amount to eligible employees who, because of illness or injury, are unable to work for an extended period. Benefits are usually a fixed percentage of predisability earnings up to a set limit. Most participants have a waiting period of three or six months, or until sick leave and STD benefits end, before benefit payments begin. LTD payments generally continue until retirement, until a specified age, or for a period that varies by the employee's age at the time of disability.

LTD policies arose as a result of growing concern about the adequacy of state workers' compensation systems. Nearly 70 percent of participants were in plans that specified a minimum length of service before an employee was eligible. Another common eligibility requirement stems from a plan's definition of total disability. Employees must be determined as totally disabled to be eligible for long-term disability. During the first year or two years of the disability, total disability is defined by the inability of the employee to do his or her job. After this period, the definition becomes more restrictive, and requires that the employee be unable to perform any type of job. Hence, the provisions of long-term disability encourage return to the workforce if at all possible.

Not all private plans require total disability as a precondition for receipt of LTD benefits. Some plans provide for partial disability if an employee can perform some duties of his or her regular occupation on a part-time basis, or if the individual can perform duties for another occupation for which he or she is qualified. If an employee is partially disabled, the benefit is

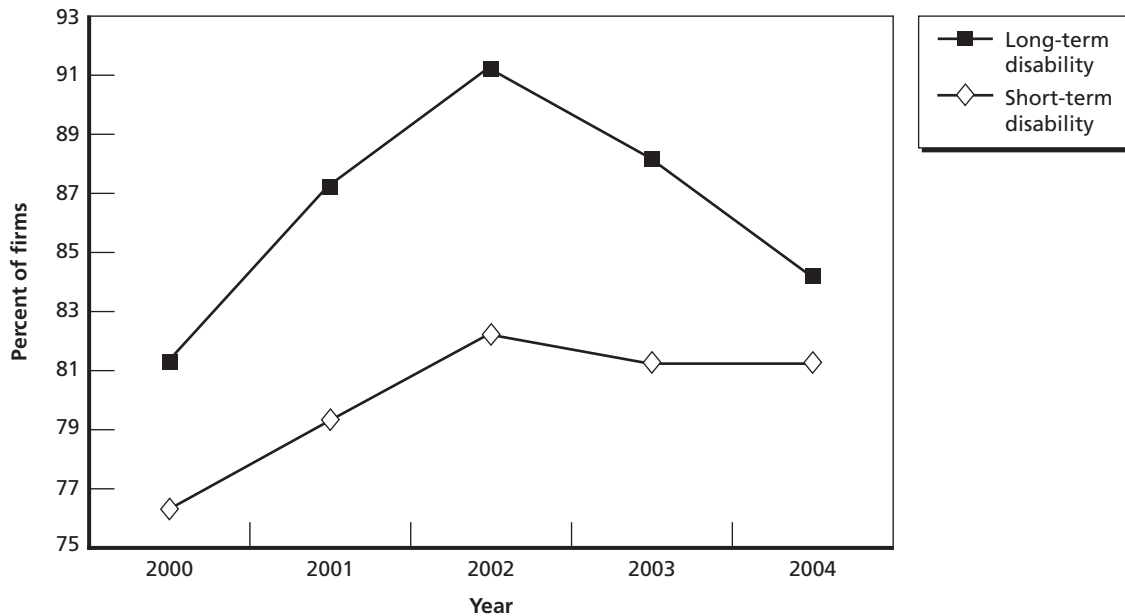
Table 2.4
Features of Disability Benefits

| Feature of Disability Benefits | Full Sample | Industry | | | | | | Government | Firm Size | |
|---|-------------|---------------|-------|----------|-----------|-------------|--------------------|------------|-----------|---------------|
| | | Manufacturing | Trade | Services | Transport | Health Care | Financial Services | | 100–499 | 5,000 or more |
| Disability Management | | | | | | | | | | |
| Consistent return to work policy | 62 | 65 | 46 | 63 | 61 | 61 | 70 | — | 73 | 54 |
| Clinical case management | 41 | 47 | 53 | 36 | 35 | 43 | 41 | — | 25 | 60 |
| Central intake for all absences | 42 | 43 | 41 | 40 | 39 | 41 | 45 | — | 49 | 39 |
| Link disability and claims data | 9 | 11 | 9 | 9 | 12 | 9 | 8 | — | 9 | 10 |
| Link occupational and nonoccupational data | 12 | 17 | 9 | 10 | 18 | 8 | 11 | | 5 | 21 |
| Short-Term Disability | | | | | | | | | | |
| Offer plan to salaried workers | 80 | 81 | 74 | 78 | 88 | 80 | 81 | — | 80 | 79 |
| Employer pays cost of coverage | 79 | 74 | 89 | 81 | 71 | 79 | 81 | — | 75 | 77 |
| Benefits begin at first day of absence | 19 | 25 | 13 | 14 | 20 | 11 | 10 | 46 | 19 | 17 |
| Benefits begin after a fixed number of days | 63 | 56 | 69 | 70 | 60 | 75 | 66 | 38 | 71 | 64 |
| Full pay up to max duration | 17 | 11 | 28 | 18 | 23 | 14 | 19 | 10 | 15 | 16 |
| Uniform percent (<100%) of pay | 40 | 48 | 28 | 33 | 32 | 45 | 39 | 50 | 41 | 37 |
| Amount varies by length of disability | 9 | 9 | | 7 | 5 | 16 | 8 | 20 | 9 | 11 |
| Amount varies by length of service | 23 | 22 | 26 | 26 | 25 | 21 | 21 | 20 | 26 | 24 |
| Average % of pay | 66 | 63 | 65 | 88 | 60 | 61 | 61 | — | 63 | 61 |
| Long-Term Disability | | | | | | | | | | |
| Average % of salary paid | 58 | 59 | 59 | 59 | 58 | 56 | 59 | — | 61 | 57 |
| Average monthly benefit maximum (\$) | 9,706 | 9,573 | 9,176 | 9,536 | 9,829 | 8,643 | 12,048 | — | 9,441 | 10,122 |

SOURCE: Mercer Human Resource Consulting, 2004.

NOTES: Data are blank for government entries due to small sample size. Unless otherwise noted, numbers in the table are percentages. The “Average percent of pay” is computed for plans that pay a uniform fraction of pay.

Figure 2.2
Percentage of Civilian Employers Offering STD and LTD Benefits



SOURCE: Burke, 2004.

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commonly reduced by 50 percent. The employee's plan benefits typically continue as long as the new earnings are less than the predisability salary by a percentage specified in the policy.

LTD benefits are generally based on previous earnings. Since disabled individuals may receive payments from various sources (workers' compensation, Social Security, state disability insurance, and employers' pension plans, for instance), benefits are offset so that payments are no higher than the previously determined replacement rate. Plans also often have explicit ceilings on total benefits (Hill, 1987).

The BLS (2005) survey found that 30 percent of workers had access to LTD plans. Earnings were strongly correlated with access to LTD benefits. While only 17 percent of those earning less than \$15 per hour had access to LTD benefits, half of those in higher earnings groups had access to these benefits. LTD plans were much less likely to be available for part-time workers or those in service occupations than for full-time workers or those in blue- and white-collar occupations.

In the Mercer Survey (2004) nearly all employers (98 percent) offered LTD benefits to their employees.⁹ In just over half the surveyed employers (54 percent), the employer pays the full cost of LTD coverage. Some 30 percent of the employers pay the full cost of basic coverage, and employees have the option of buying more extensive coverage. Most plans (63 percent) provide 60 percent income replacement. Almost all LTD policies have a maximum monthly benefit that is based on the profile of current employees. Over half of the employers have a maximum between \$5,000 and \$10,000. In an effort to control costs, employers are also implementing rigorous guidelines to evaluate disabilities. The vast majority of employers

⁹ As with STD access, the higher access rates for firms in the Mercer Survey than for individual workers in the BLS survey reflect Mercer's focus on much larger firms.

(83 percent) require that the employee be under the care of a physician for the treatment of the disability in order to receive benefits.

The SHRM survey (Burke, 2004) found that 84 percent of companies offered LTD policies. Larger firms were more likely to offer such policies: Seventy-eight percent of firms with fewer than 100 employees, 85 percent of medium sized firms (100–499 employees), and 92 percent of large firms (500 or more employees) offered LTD policies. There were also some differences in the rate of offering disability policies by industry. Finance-based companies were the most likely to offer LTD benefits (97 percent), and nonprofit service-based companies were the least likely (64 percent). Other industries had intermediate rates—high tech, 85 percent; government, 79 percent; health, 85 percent; manufacturing (durable goods), 85 percent; manufacturing (nondurable goods), 70 percent; services (for profit), 85 percent; wholesale/retail trade, 75 percent. However, the only statistically significant difference was between finance and nonprofit services. The rate of offering long-term disability peaked at 91 percent in 2002, but since then has fallen to 84 percent (see Figure 2.2).

Despite the appearance of a trend in short-term and long-term disability coverage in the raw data, Levy (2004) conducted a multivariate analysis and found little evidence of a systematic trend from 1980 to 2000 in the fraction of workers with either short- or long-term disability insurance coverage. Consistent with the descriptive data, she found that low-skill, low-wage, short-tenure, and part-time workers are all much less likely to have these benefits, as are workers in small establishments (Levy, 2004).

Disability Retirement

Private pension plans commonly provide for disability retirement benefits that cover retirement resulting from a totally disabling injury or illness prior to eligibility for early or normal retirement (Bell and Wiatrowski, 1982). Plans providing disability retirement benefits may have a service requirement of ten years or more. Benefits may be immediate or deferred. Under plans with immediate disability benefits, payments start at the time of illness or injury. Under plans with deferred benefits, payments are made at the retirement age specified in the plan, and employees who qualify for long-term disability usually continue to accrue benefits until their formal retirement date is reached. When the formal retirement age is reached, their disability payments cease and pension payments begin. Long-term disability plans are generally coordinated with disability retirement payments (Hill, 1987).

The BLS survey (2005) showed that disability retirement benefits were available to 76 percent of all workers. Interestingly, availability was lower for white-collar workers (72 percent) than for blue-collar workers (80 percent) or service workers (89 percent). The payment of disability benefits was immediate for 40 percent of workers and deferred for 33 percent of workers.

Social Security Disability Insurance

SSDI provides wage replacement income for a wage earner who becomes disabled. It is financed with Social Security taxes paid by workers, employers, and self-employed persons. SSDI benefits are payable to disabled workers, widows, widowers, and children or adults disabled since childhood. SSDI was initially established in 1956 to cover “involuntary retirement” due to disabilities.

To be considered medically disabled according to Social Security rules, an individual must be unable to engage in any “Substantial Gainful Activity” due to a disability that has

lasted or can be expected to last for a continuous period of not less than 12 months. An individual should be unable to perform his or her job.

The monthly disability benefit amount is based on the Social Security earnings record of the worker. The monthly benefit is a function of the workers' average indexed monthly earnings over his or her work history. In addition, eligibility is conditional on having worked a minimum number of quarters immediately prior to the disability. Eligibility for monthly SSDI benefits begins five months after the onset of the disability. An SSDI recipient becomes eligible for Medicare after two years.

SSDI beneficiaries are periodically reviewed to determine if there has been any medical improvement in their condition and to determine whether they continue to be eligible for benefits (World Institute on Disability, 2005).

Supplementary Security Income

SSI was established in 1974 to provide income support for low-income blind and disabled people under age 65. SSI benefits are not predicated on work history; however, SSI benefits are coordinated with SSDI benefits with a dollar-for-dollar offset of SSDI benefits. Eligibility for SSI is means-tested.

Figure 2.3 shows the trends in program expenditures for SSI, SSDI, workers' compensation and the VA. The growth in SSDI and workers' compensation has far exceeded the growth in VA expenditures.

Effects of Disability Insurance on Labor-Market Outcomes

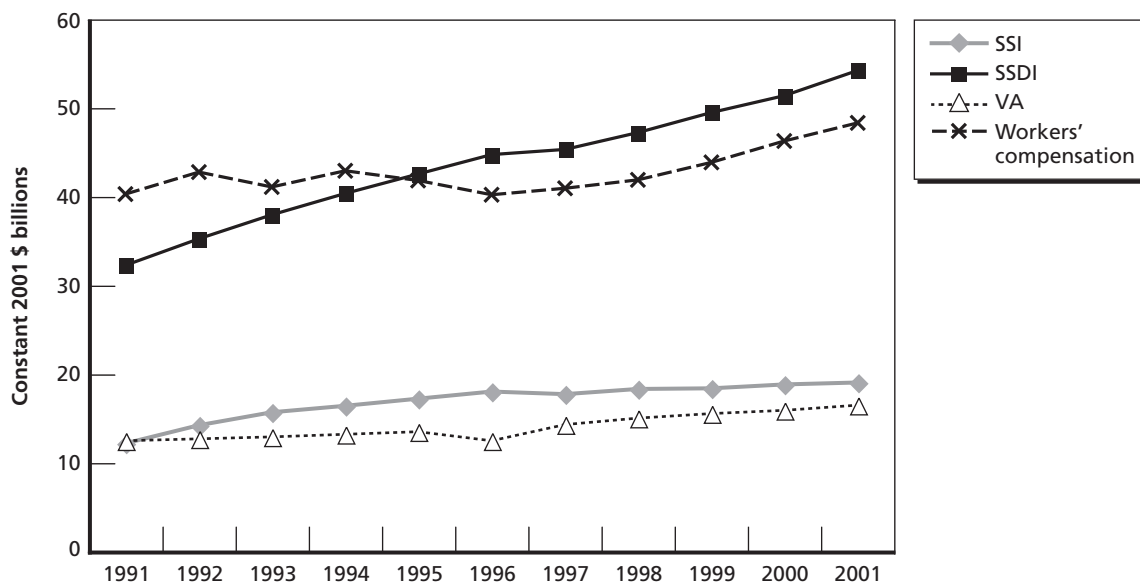
A considerable amount of research has focused on the effect of various civilian disability benefits on labor force participation, disability receipt, and the duration of disability receipt. The literature on civilian disability insurance systems has relevance to the military disability system. The civilian literature has explored the effect of several key policy levers, such as the level of benefits, the ease of the application process, and the difficulty in being certified as disabled. These disability policy tools may have an effect on workers' propensity to apply for disability benefits, the duration of disability, and the propensity to return to work. Lessons from the effectiveness of each of these policy levers can be applied to inform reforms to the military disability system.

Theoretically, the provision of disability benefits should affect worker behavior. We would expect workers to expend lower effort on injury prevention and safety if they have good disability benefits. This phenomenon is called *moral hazard*. Furthermore, we would expect workers to be more likely to file a disability claim as benefits rise and as filing costs fall. We would also expect the duration of the disability to increase and the propensity to return to work to fall as disability benefits increase.

The empirical evidence on the effect of disability benefit size has shown that benefit generosity increases the probability of benefit receipt. Krueger (1992) found that workers' compensation receipt is very responsive to the size of the benefit for men, but not for women. In other research, a 20-percent reduction in SSDI benefits was found to lead to a 9-percent drop in applications for SSDI (Kreider and Riphahn, 2000).

Benefit generosity has also been found to reduce labor force participation. The literature has found a wide range of estimates for the responsiveness of working to the availability of SSDI benefits. Labor force participation elasticities have varied from 0.06 to 0.81. One study found that the increase in SSDI benefits from 1968 to 1978 accounted for one-third of the

Figure 2.3
Trends in Disability Payments



SOURCE: GAO, 2002; Williams, Reno, and Burton, 2004.

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decline in labor force participation (Kreider, 1999). Another study exploited the natural variation in disability benefits in different provinces in Canada and found that raising the disability benefits led to a sizable labor force response, implying an elasticity of about 0.3 (Gruber, 2000).

There is also some evidence that benefit generosity increases the duration of disability benefit receipt. Butler and Worrall (1985) found longer workers' compensation claim durations for lower back injuries in Illinois when benefits increased. Another study found that a 10-percent increase in workers' compensation benefits was associated with a 3-percent increase in the duration of the disability (Meyer, Viscusi, and Durbin, 1995).

A lengthy and cumbersome disability application process has also been found to reduce applications for disability benefits. In particular, a change in the waiting period from three days to seven days was found to reduce workers' compensation receipt by 39 percent (Meyer, 1989). Furthermore, eliminating SSDI waiting periods was found to have the same effect on SSDI applications as a 10-percent rise in benefits (Kreider, 1999; Parsons, 1991). A lower probability that an SSDI application is approved also reduced incentives to apply for benefits—in particular, a 20-percent decline in the probability of SSDI acceptance led to a 12-percent decline in the application rate. In fact, the reduced screening stringency for disability benefits, the declining demand for less-skilled workers, and the increase in SSDI benefits has led to a doubling of the labor force exit rate for displaced high school graduates (Autor and Duggan, 2003).

The methods and variation in the setting of payments for disability programs have received some attention. Payments for permanent partial workers' compensation disabilities have varied widely for the same injury. Variations in the benefits for seemingly similar injuries can occur for several reasons. First, different states have different benefit schedules and therefore different payments. Second, payments have been found to vary due to demographics and other

socioeconomic factors (Durbin and Kish, 1998). Third, payments are often based on physician ratings of economic losses. But physician ratings are often poor estimates of economic losses. In one study, the ratings were found to explain only 1 percent of subsequent wage loss (Park and Butler, 2000). In general, physicians are unaware of the specific demands of the injured worker's job and lack the necessary information required to estimate the degree of earnings loss. Another study of the California workers' compensation system concluded that the system works on average; however, there are large differences in payments due to interphysician rating variation (Reville et al., 2005).

The literature on civilian disability insurance systems provides an important lesson for the military experience. The benefit levels, ease of application process, and screening stringency have considerable effects on the propensity to apply for benefits and the propensity to return to the workforce. Therefore, the benefit parameters for military disability should be chosen carefully to preserve incentives to return to work in the civilian sector and yet provide adequate insurance in the case of disabling injuries. Furthermore, disability payments should be set in a consistent and transparent way so that there is little random variation in payments for similar injuries. The military system may also want to examine applying the principles of civilian disability management programs that aim to control disability costs and streamline disability programs.

Measuring Earnings Losses

This chapter explains our approach to estimating how SCDs affect veterans' success in civilian labor markets. The chapter begins with a review of several recent studies of earnings for disabled veterans. We discuss the limitations of these studies and possible improvements on their research methods. Next, we discuss our data on veteran characteristics and their earnings over their first several years in the civilian labor market. We examine both the effects of SCDs on the earnings of employed veterans and their effects on participation in the civilian labor market. SCDs should reduce the LFP of veterans and adversely affect their earnings in the work force.

Prior Research on Veteran Earnings Losses

Buddin and Kapur (2005) was the first study to systematically examine how the earnings of individual veterans were affected by SCDs. The study used survey data on military retirees and compared the earnings of retirees with no SCD with those of comparable retirees with various disability ratings associated with SCDs.¹ The results showed that ratings of less than 50 percent generally had small effects on civilian LFP and earnings—i.e., these retirees had civilian labor-market outcomes similar to those of comparable retirees with no SCD. Higher ratings had much more adverse effects on both participation and earnings, but earnings losses were much smaller than the corresponding disability rating. For example, a 60-percent disability rating was associated with only a 25-percent reduction in civilian earnings. Disability compensation more than offset the earnings losses for both disability and nondisability retirees, especially after adjusting for the fact that disability payments are untaxed. As a result, retirees with SCDs were financially *better off* than comparable other retirees without SCDs.

Buddin and Kapur (2005) also highlighted differences between military and civilian disability programs. Most injuries in the civilian workplace are subject to workers' compensation laws. Under these laws, injured employees typically receive about two-thirds of their wages (subject to a cap on wages) during a limited period of rehabilitation from the injury. These benefits end when the individual returns to work, and the benefits generally last no more than six months. After that, the individual transitions into longer-term disability payments under Social Security. These longer-term benefits are also limited in amount and length and end when the individual returns to work.

¹ The study included DoD disability retirees. The ratings for these veterans were based on DoD disability ratings, unless the member had applied to the VA disability program. Most retirees had nondisability retirements, so their ratings were based on VA evaluations.

Unlike the civilian programs, the military provides full-time pay and benefits while an individual recovers from an injury. Even if individuals return to military duty, they may be eligible for compensation for their SCD after leaving the military. Unless the individual receives a disability separation, the VA disability compensation is determined solely by the VASRD and is unrelated to individual civilian earnings.² Military disability compensation supplements civilian earnings, whereas civilian disability compensation programs replace a portion of civilian earnings only during a rehabilitation period when the injured worker has no earnings.

Christensen et al. (2007) combined demographic and rating data on veterans with civilian earnings from the Social Security Administration (SSA). For privacy reasons, the SSA does not provide individual-level data, but it will provide average earnings for cells defined with no fewer than five observations. Using this type of information, the analysis compared the earning levels of veterans with and without SCDs.

Christensen et al. found parity between the lifetime earnings of veterans with no SCD and veterans with SCDs, after adjusting for disability compensation and the tax-free advantage of disability payments. They found that veterans who first received benefits after age 65 were much better off than similar veterans without an SCD. This advantage probably reflects the fact that VA disability compensation continues after civilian retirement, so veterans drawing VA disability compensation in addition to Social Security benefits are much better off than veterans who receive only Social Security benefits.

In addition, Christensen et al. found that veterans with primarily mental conditions were less likely to reach earnings parity than were veterans with primarily physical conditions. Veterans with physical conditions have longer life expectancy than those with mental conditions, and the authors argue that this is the main factor reducing the earnings of veterans with mental problems to below parity.

Economic Systems (2008) also examined how SCDs affected civilian earnings. They also compared civilian earnings for veterans having various ratings with those of veterans with no SCD. Using SSA earnings data, they found that veterans with ratings less than 50 percent had civilian earnings within 5 percent of veterans with no disability. Earnings losses were 13 percent for a 50-percent rating, 25 percent for a 90-percent rating, and 84 percent for a 100-percent rating. Looking across all ratings, the earnings loss averaged 6 percent of earnings, since most veterans have SCDs with low ratings.

The study found that these earnings losses were more than offset for veterans with all ratings except those with a 100-percent disability rating. Veterans' disability compensation exceeded their earnings losses by 5 to 20 percent for earnings losses over the 10- to 90-percent rating range. In contrast, veterans with 100-percent ratings have civilian earnings plus VA compensation that is 10 percent less than comparable veterans with no SCD.

² For disability separations, DoD compensation is based on years of service and pay grade (also disability rating for disability retirees). These factors are indirectly related to civilian labor market opportunities. The "extra" payments for years of service and paygrade are not necessarily meant to offset differences in civilian opportunities, however. Rather, the payments may be intended to defray the expenses of an unexpected and unintentional displacement from a military job and, in the case of military retirees, to defray implicit contributions to the military retirement system.

Data for Current Study

Background Data on Veterans

Most of our analysis variables are drawn from administrative personnel files maintained by the Defense Manpower Data Center (DMDC). A key record is the active duty loss record, which details the characteristics of each servicemember at the time of separation. This information includes member age, race/ethnicity, gender, education level, Armed Forces Qualification Test (AFQT) score for enlisted members, service branch, service occupation, military pay grade, officer/enlisted status, separation date, and separation code. The separation code is used to identify whether the separation is disability retirement, disability severance, nondisability retirement, or normal separation at the completion of a service obligation. Most first-term enlistees leave active duty at the end of their obligated enlistment term (generally four years).

We focused on active duty separation cohorts from FY1993 through FY2004. We would have liked to use separations from more-recent cohorts, but the Social Security Administration was able to provide civilian earnings only for veterans through calendar year 2005. Many non-disability retirees from our early loss cohorts entered active duty in the 1970s.

We also constructed two additional characteristics for each member's experiences. First, we constructed an indicator variable for whether the member served in the conflicts in Afghanistan or Iraq between 2001 and 2004. This variable was designed to measure whether the civilian labor-market experiences of these veterans differed from those of comparable other veterans who were not deployed in those conflicts. The measure predates severe casualty rates of more recent years and tracks these veterans for only a few years of civilian experiences, but it may provide some indication of how veterans of these conflicts are faring after leaving active duty.

We also constructed a measure of active duty promotion success for each member at the time of separation. Our premise was that military members with above-average promotion times in the military might be more highly skilled and ambitious than others, so they might fare better in civilian employment than comparable other members with slower promotion times.

Veteran Ratings

The ratings variables were constructed from DoD and VA pay files. DoD reports ratings for all disability retirees. These ratings reflect the rating associated with the SCD that makes the individual unable to continue on active duty, although the member might have additional SCDs and be eligible for a higher rating from the VA. Our data reflect the period before the recent coordination of DoD and VA separation routines, but disability retirees are made aware of the possibility of additional VA support and many do subsequently transition to the VA compensation system. All veterans are eligible for VA compensation for SCDs, so the VA pay files contain SCD ratings for veterans who successfully completed their enlistment term or had a nondisability retirement as well as some veterans with disability retirements or disability severances who apply for VA benefits.

A potential gap in the ratings variable is for the disability severance group. These members are discharged because they have a DoD rating less than 30 percent, so they do not meet the requirements for a disability retirement. The specific ratings for these disability severances are not available in our DoD personnel records. Most veterans with disability severances transition to the VA compensation program, however, so we use this VA rating in our analysis.

Our ratings variable is a blend of DoD and VA ratings, but our analysis includes specific controls for veterans with disability retirement or severance. These controls will provide an indication of whether veterans who have disability separations from active duty fare better or worse than other similar veterans with nondisability separations.

The timing of ratings was an important concern for our analysis. While DoD ratings are “permanent,” veterans with DoD disability separations (i.e., either disability separations or disability severances) are eligible to transition to the VA. VA evaluations do change from time to time, but there is no systematic reevaluation of members on a regular basis. VA ratings may increase over time as a SCD becomes more limiting or new SCDs are identified. Similarly, VA ratings may fall if the veteran’s condition improves. Most reevaluations are veteran-initiated, however, so some changes go unnoticed. Similarly, some veterans may “shop” for higher ratings by requesting additional reviews.

Table 3.1 provides some indication of how ratings change over time. Civilian experience is the difference between the veteran’s cohort year and the current calendar year. Column 2 shows that only about 3 percent of veterans have a rating change during the first four year of civilian experience. The average rating change from the initial rating is only about 0.17 points after four years. These numbers are still small after 12 years of post-service civilian experience. The numbers in Table 3.1 are distorted somewhat by the fact that most veterans have a rating of 0 when they leave active duty, and few of these veterans subsequently receive a rating greater than zero. The percentage of members changing ratings and the average rating change are considerably higher for the group of veterans with post-service ratings greater than zero (see columns 4 and 5 in Table 3.1).

Ideally for our analysis, veterans would be given an annual review and reevaluated independent of their previous review. This type of measurement would help identify how changes in individual rating (upward or downward) affect civilian earnings. This is not the case, how-

Table 3.1
Changes in Individual Ratings over Time

| Years of Civilian Experience | All Ratings | | Initial Rating > 0 | |
|------------------------------------|----------------------|-----------------------------|----------------------|-----------------------------|
| | Percentage Change | Average Rating Change | Percentage Change | Average Rating Change |
| 1 | 1.4 | -0.094 | 6.1 | -0.425 |
| 2 | 2.1 | 0.002 | 9.6 | 0.007 |
| 3 | 2.6 | 0.079 | 12.4 | 0.379 |
| 4 | 3.0 | 0.166 | 15.0 | 0.826 |
| 5 | 3.4 | 0.247 | 17.4 | 1.271 |
| 6 | 3.6 | 0.313 | 19.2 | 1.662 |
| 7 | 3.8 | 0.374 | 20.9 | 2.062 |
| 8 | 3.9 | 0.426 | 22.4 | 2.438 |
| 9 | 4.0 | 0.469 | 23.9 | 2.767 |
| 10 | 4.2 | 0.518 | 25.5 | 3.166 |
| 11 | 4.3 | 0.538 | 27.3 | 3.424 |
| 12 | 4.3 | 0.626 | 27.6 | 4.001 |

ever, and the VA compensation data contain only information on end-of-the-year rating, with no corresponding indication of how, whether, when, or why a reevaluation occurred.

In our analysis, we focused on initial disability ratings of members. The initial rating is more exogenous than subsequent ratings, because all veterans pass through a similar military separation physical and have some common knowledge about potential SCDs. Subsequent reevaluations may be driven by an individual's situation and motivation, so these ratings results might bias the overall results. We also include some subsequent analysis on the timing of earnings losses and address when these initial ratings are suitable indications of veterans' earning opportunities.

Civilian Earnings Data

We obtained information on civilian earnings of veterans from the Social Security Administration. For privacy reasons, the SSA will not disclose individual earnings to researchers, but it will provide earnings data aggregated into groups. We classified veterans according to various groups or cells, based on veteran background and ratings variables,³ where each record included a cell number as well as a unique scrambled identifier for each veteran. The SSA linked its annual information on individual earnings and LFP with our records, using the same veteran identifier. It then aggregated earnings information within each cell and provided us with cell-specific earnings data for each full year of civilian market experience. For example, if a veteran was in the 2000 separation cohort, then we obtained aggregated earnings information for the veteran and a small number of veterans with similar backgrounds having the same initial disability rating for years 2001, 2002, 2003, 2004, and 2005.

SSA collects a Social Security and Medicare tax on wages under the Federal Insurance Contributions Act. The Social Security tax applies to gross wages up to an annual cap (\$106,800 for 2009 through 2011). The Medicare tax has no limit on gross wages. SSA provided us with Medicare wage earnings for our analysis. This variable is preferable to Social Security wage earnings because Medicare wage earnings are not capped. Medicare tax is not applied to retirement or pension income, so our earnings measure does not include income from these sources. Medicare earnings also do not reflect disability income, because this income is not taxed.

Social Security and Medicare taxes are paid for military and civilian wages. In our data, some active duty veterans may join a Reserve unit. If so, their wages from the unit would be reflected in their SSA Medicare earnings. Military members are eligible for an income tax exclusion for income earned in a combat zone (up to a cap), but they still have Social Security and Medicare taxes deducted from their pay.

We do not have individual longitudinal data on earnings, but we observed how average earnings and labor force participation varied over time for small groups of similar veterans. All earnings were converted into constant 2005 dollars.

Description of Veteran Groups

Civilian labor-market opportunities vary with an individual's education, age, race/ethnicity, and gender. We divided veterans into five broad groups that are likely to characterize different portions of the civilian labor market: (1) enlisted males (including disability separations), (2) enlisted females (including disability separations), (3) all enlisted nondisability retirees, (4)

³ The classification procedure is explained in more detail later in this section.

Table 3.2
Descriptive Statistics for Veterans Groups

| Characteristic | Enlisted Males | Enlisted Females | Enlisted Nondisability Retirees | Officer Nondisability Retirees | Other Officers |
|-----------------------------|----------------|------------------|---------------------------------|--------------------------------|----------------|
| LFP (%) | 93 | 85 | 88 | 86 | 90 |
| Civilian earnings (2005 \$) | 33,751 | 23,361 | 38,770 | 78,955 | 84,881 |
| Age at separation | 26 | 26 | 41 | 44 | 32 |
| Percent with some college | 14 | 24 | 40 | 100 | 100 |
| Percent Black | 17 | 29 | 21 | 5 | 8 |
| Percent Hispanic | 7 | 7 | 4 | 2 | 3 |

officer nondisability retirees, and (5) other officers. Table 3.2 shows that veterans entering the civilian labor market from these groups have substantial differences in background. Enlisted males and females are age 26 when they enter the civilian labor force and more likely to be Black or Hispanic than are the other groups of veterans. While 14 percent of enlisted males have some college, about 24 percent of enlisted females have some college. Enlisted females have lower LFP than males, probably reflecting some young mothers taking time off to spend with a child. Among enlisted veterans in the labor force, females earn much less than males. We grouped enlisted medical disabilities and severances with the enlisted nonretiree groups, since these veterans had demographic characteristics more similar to these groups than the older, retiree groups.

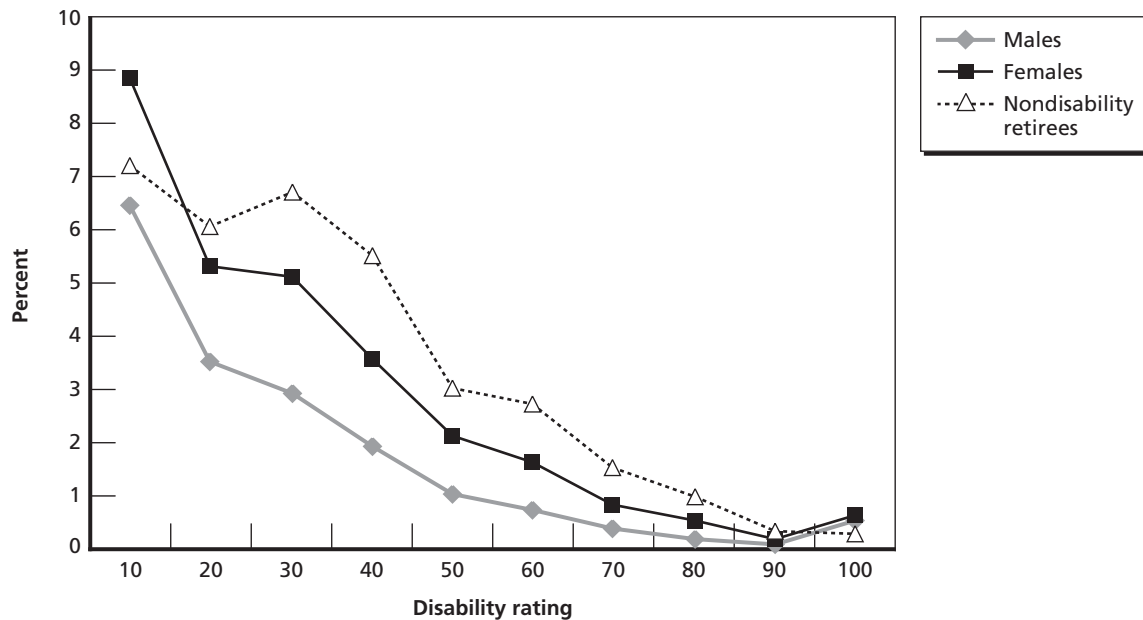
Enlisted nondisability retirees are much older than the two other enlisted groups and have higher earnings. About 40 percent of the enlisted retirees have some college by the time they leave the military. About 16 percent of the nonretiree group is female, but only 9 percent of enlisted nondisability retirees are female.

Officers are all college graduates. About 62 percent of the officer nondisability retirees have a master's degree or better. The other-officer group leaves the military at a much younger age without being eligible for a length-of-service retirement. About 29 percent of this group has a master's or professional degree. Minority representation in the officer force is much less than in the enlisted force.

Within each of these groups, we compared the LFP and civilian earnings of veterans with and without a SCD, controlling for a range of factors that affect civilian labor-market opportunities. These factors include age at separation from the military, education, race/ethnicity, gender, and AFQT score for enlisted personnel. Military service branch may affect earnings if some skills are more transferable to the civilian sector. A measure of military promotion tempo is included, since "fast burners" in the military may also do better in civilian employment. We also adjusted for the military separation cohort of each veteran because veterans may face different economic conditions depending on when they left the military.

We have longitudinal measures of LFP and civilian earnings for all active duty veterans separating from the military between 1993 and 2004. We examine how these labor-market outcomes change from year to year as a veteran settles into the civilian labor market. This tracking is useful because new veterans may have transition issues as they switch from military to civilian employment, but these problems may abate as they adjust to civilian employment. In addition, veterans with SCDs may have different short- and long-term losses in the labor

Figure 3.1
Distribution of Disability Ratings for Enlisted Personnel for 1993–2004 Active Duty Losses, by Group



RAND MG1098-3.1

market. Our analysis includes a measure of civilian labor-market experience to separate the short- and long-term effects of SCDs on earnings.

Each model also includes measures of veteran disability ratings for each group. By construction, these ratings should reflect the degree of earnings loss associated with each SCD rating. In the enlisted male, enlisted female, and other-officer groups, the model also includes indicators for whether the veteran had a disability retirement or severance from the military. These indicators will show whether the earnings losses for these groups are comparable to those of other veterans with the same rating, i.e., whether veterans managed by the DoD disability system have different labor-market outcomes than those managed by the VA system.

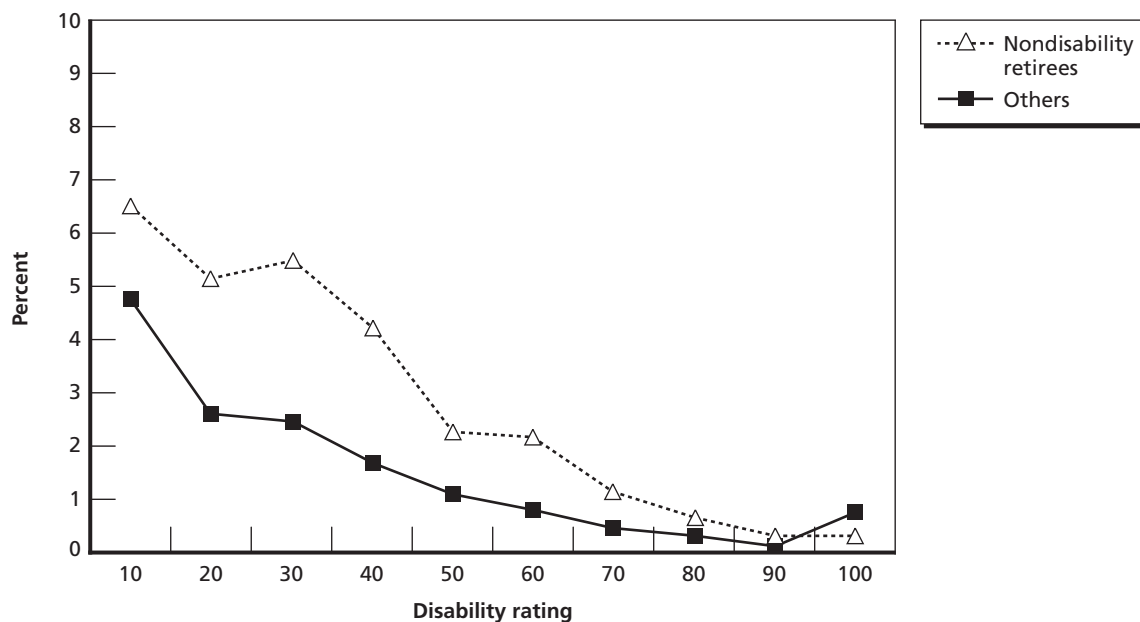
Figure 3.1 shows the disability ratings for enlisted members. Overall, about 18 percent of enlisted males leave active duty with some disability rating compared with 29 percent of enlisted females and 34 percent of enlisted nondisability retirees.⁴ In each group, the vast majority of ratings are in the 10 to 30 categories. Less than 1 percent of each group has the most severe ratings of 90 or 100 percent. Ratings for nondisability retirees and enlisted females are much higher than those for enlisted males.

Figure 3.2 shows disability ratings for officers. About 28 percent of nondisability officer retirees left active duty with some disability compared with about 15 percent of other officers. As with the enlisted ranks, most ratings are small, with less than 1 percent of either officer group receiving ratings of 90 or 100 percent.

The incidence of disability among active duty veterans has grown considerably across recent separation cohorts. Figure 3.3 shows that about 14 percent of enlisted males left with a

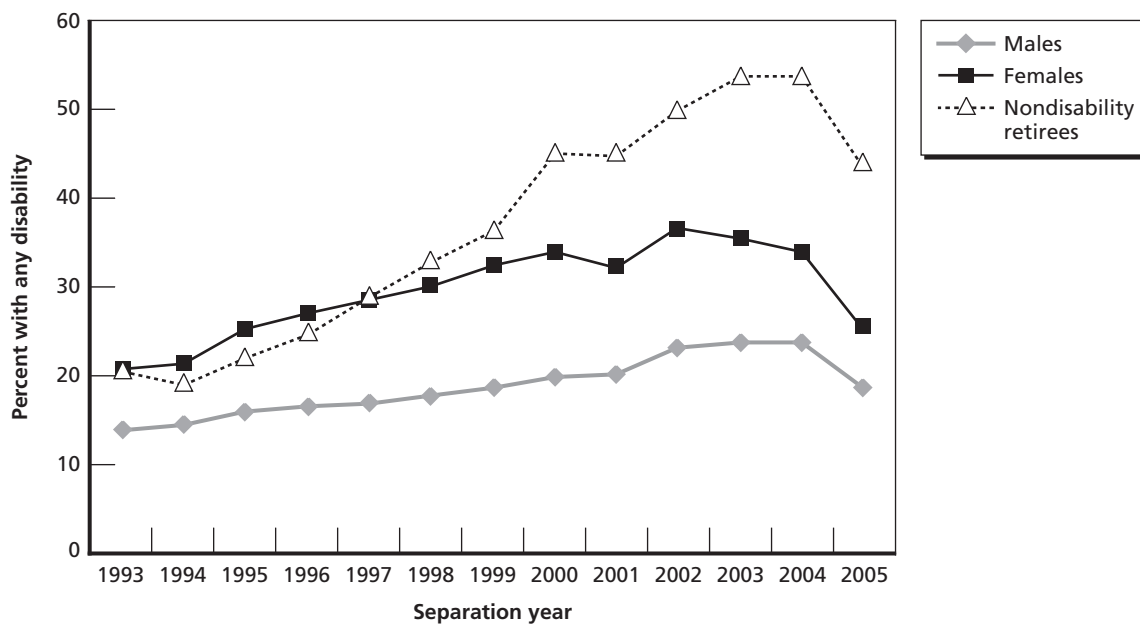
⁴ These percentages are based on adding the percentage with ratings of 10 or greater for each group in Figure 3.1.

Figure 3.2
Distribution of Disability Ratings for Officers for 1993–2004 Active Duty Losses, by Group



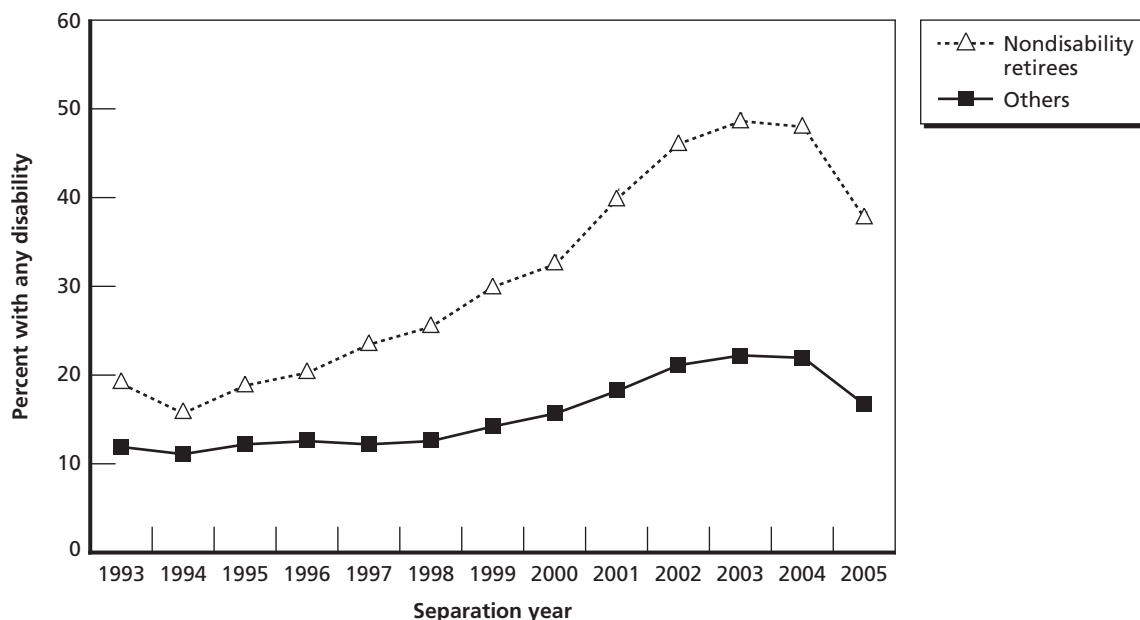
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Figure 3.3
Trends in Disability Rating for Enlisted Personnel for 1993–2004 Active Duty Losses, by Group



RAND MG1098-3.3

Figure 3.4
Trends in Disability Rating for Officers for 1993–2004 Active Duty Losses, by Group



RAND MG1098-3.4

disability in 1993, compared with 24 percent in 2004. Among enlisted females, the share rose from 21 to 36 percent over this period. By 2004, about 54 percent of enlisted nondisability retirees had left active duty with some disability rating, compared with only 20 percent of this group in 1993. The disability incidence declined for each group in 2005, but it remains substantially higher in 2005 than over many of the previous cohorts.

The incidence of disability among officers has also grown substantially for recent cohorts (Figure 3.4). About 19 percent of nondisability officer retirees received an initial disability rating in the 1993 cohort, compared with 48 percent in the 2004 cohort. Similarly, the share of other officers with a rating was 12 percent for the 1993 cohort compared with 22 percent for the 2004 cohort.

The large differences in disability rates across cohorts mean that disability outlays have grown dramatically over time. In addition, the high rates of disability for recent cohorts portend substantially higher disability compensation payments for many years as veterans from the recent cohorts age and continue to draw compensation payments. A useful research study might be to carefully review medical records and assess whether higher disability rates among recent cohorts reflect a more lenient interpretation of the VASRD or more SCDs for recent cohorts. Whatever the reasons for the changes, disability compensation outlays will certainly be higher than if disability incidence had remained at the levels observed in the earlier cohorts.

Tables 3.3 and 3.4 show differences in the demographic and military characteristics of the various enlisted and officer groups. The Air Force is more career-oriented than the other service branches, so Air Force retirees are a larger share of the nondisability retiree group than either of the other nonretiree groups. In contrast, the Marine Corps has a large emphasis on first-term enlistees and combat, so Marines are a relatively small share of enlisted female veterans and nondisability retirees. Enlisted females are better educated than enlisted males. Retirees have enhanced their education in the military, so this group is much better educated than the

Table 3.3
Descriptive Statistics for Enlisted Groups

| Variable | Enlisted Males (%) | Enlisted Females (%) | Nondisability Retirees (%) |
|----------------------|--------------------|----------------------|----------------------------|
| Army | 36 | 37 | 28 |
| Navy | 28 | 29 | 28 |
| Marine Corps | 21 | 7 | 7 |
| Air Force | 15 | 27 | 37 |
| Black | 16 | 28 | 23 |
| Hispanic | 8 | 8 | 5 |
| High school diploma | 82 | 78 | 54 |
| Some college | 11 | 17 | 30 |
| B.A. or more | 2 | 4 | 10 |
| Age at separation | 26 | 26 | 41 |
| Female | 0 | 100 | 9 |
| Disability retiree | 3 | 4 | NA |
| Disability severance | 7 | 11 | NA |
| Sample Size | 1,093,173 | 174,626 | 355,944 |

Table 3.4
Descriptive Statistics for Officer Groups

| Variable | Nondisability Retirees (%) | Others (%) |
|----------------------|----------------------------|------------|
| Army | 37 | 35 |
| Navy | 22 | 25 |
| Marine Corps | 7 | 7 |
| Air Force | 36 | 31 |
| Black | 7 | 7 |
| Master's degree | 56 | 14 |
| Professional degree | 6 | 15 |
| Age at separation | 44 | 32 |
| Female | 10 | 21 |
| Disability retiree | NA | 3 |
| Disability severance | NA | 2 |
| Sample size | 88,792 | 117,346 |

nonretiree groups. Retirees generally serve 20 years or more in the military to earn retirement benefits, so this group of veterans is about age 41 when leaving the military as compared with only 26 for enlisted males and females.

About 7 percent of enlisted males and 11 percent of enlisted females leave with a disability severance. These members have the option of repaying the severance and receiving disability payments from the VA. About 70 percent of the veterans with military severance are reevaluated by the VA within the first year or two of leaving active duty. About two-thirds of those members receive ratings of 10 or 20 percent from the VA.

About 3 percent of enlisted males and 4 percent of enlisted females leave active duty with a disability retirement. About 75 percent of DoD medical retirees are subsequently reassessed by the VA. Of the reassessed enlisted veterans, 45 percent received a reduced rating from the VA (most of these had received temporary disability ratings from the DoD when leaving active duty), 28 percent kept the same rating, and 27 percent received an increased rating from the VA.

The three primary differences between officer groups are age at separation, education, and gender (see Table 3.4). On average, officer nondisability retirees leave the military at age 44, compared with age 32 for other officers. Most officer retirees earn a master's degree while on active duty. Other officers are less likely to have advanced degrees when they leave the military. Finally, female officers are much less likely to stay in the military until they are eligible for nondisability retirement benefits.

Disability severance is much less common among officers than among enlisted members. About 70 percent of the severance cases transition to the VA. The VA ratings are 0 to 20 percent for about 45 percent of officers who are reassessed. Disability retirement is no more or less likely among officers than among enlisted members.

Research Methods

Disabilities may affect a retiree's civilian labor-market work in a variety of ways.

1. *Wage Effect.* The disability may affect individual productivity, so disabled workers may face lower labor-market wages and earn less per hour.
2. *Employment Effect.* Employers may be reluctant to hire disabled workers, perhaps because of real or imagined concern about their productivity. In addition, disabled workers may be suited for fewer jobs than other workers, so they may experience greater spells of unemployment between jobs. Therefore, disabled retirees may have fewer work opportunities and may work fewer weeks per year or fewer hours per week.
3. *Work-Limitation Effect.* Some severely disabled individuals may be unable to work (or to work full time), even if work were available. In this case, an employer may be willing to pay the worker's marginal productivity, but the reduced quality of life associated with work may lead the disabled individual to limit his or her employment.
4. *Supply Effect.* Disability payments themselves may create a disincentive for disabled individuals to fully participate in the labor market. This is especially true for civilian disability payments that may be reduced or eliminated as an individual returns to work following an injury. Military disability payments enhance retiree wealth, so some retirees may increase their leisure activities and work less than they would have in the absence of this extra wealth.

These effects are difficult to separate empirically, because datasets generally do not provide sufficient information to differentiate the alternative explanations (Stern, 1989; Bound, Schoenbaum, and Waidmann, 1999; Kreider, 1999). For example, if disabled workers face lower wage rates than similar nondisabled workers, they are likely to work less and perhaps to leave the labor force altogether. This wage effect is nearly indistinguishable from a work limitation or supply effect, however, because reduced labor force participation may itself reduce

wages and because part-time employment often comes with lower wages. Also, if disabled individuals work less, they may accumulate work experience and human capital at a slower rate than other workers, and this has the cumulative effect of reducing their wages further.

These effects will provide some distortion of the “pure” effect of disability ratings on veteran earnings. Presumably, some disabled veterans reduce their LFP or are willing to accept lower-than-market wages, because their civilian earnings are augmented by disability compensation benefits. Similarly, disability compensation may provide additional income support for veterans to attend school after leaving active duty.

Statistical Model

The human-capital model is the basis for most studies of labor-market opportunities. This model posits that earnings are a function of worker experience, education, ability, and background characteristics. The distribution of earnings is typically skewed right and earnings are defined as positive returns for work, so earnings equations are typically estimated in terms of the natural logarithm (ln) of earnings. The basic statistical model is

$$\ln y_{it} = \alpha + \beta X_{it} + \varepsilon_{it},$$

where y is the earnings of individual i at time t , X represents a set of observed individual characteristics that affect labor-market productivity, ε is measurement error, and α and β are estimated parameters.

In our case, the model is more complex because some veterans are not in the labor force and have no labor-market earnings in a particular year. This nonparticipation is an important feature of veterans’ market opportunities, since SCDs may reduce their civilian employment opportunities and may even preclude some veterans from entering the workforce. Therefore, it is important to examine how SCDs affect LFP (i.e., participation in the labor market and having positive earnings) as well as how SCDs affect earnings of workers.

The labor-force model consists of two parts: a LFP equation and an earnings equation that is conditional on positive earnings. The expected earnings are the product of the probability that earnings are positive and the expected earnings conditional on positive earnings, i.e.,

$$E(y | X) = \Pr(y > 0) \times E(y | y > 0).$$

The first part is a probit equation where $\Pr(y > 0) = \Phi(\alpha_1 + \beta_1 X_1)$, and the second part is $E(\ln y | y > 0) = \alpha_2 + \beta_2 X_2$. Combining the two parts, we have

$$E(y | X) = \Phi(\hat{\alpha}_1 + \hat{\beta}_1 X_1) \times \exp(\hat{\alpha}_2 + \hat{\beta}_2 X_2 + 0.5 \hat{\sigma}^2),$$

provided the log-scale term is distributed normally (Duan, 1983; Dep, Manning, and Norton, 2006; Han and Huang, 2009).

The marginal effects of a continuous variable x_c on earnings are

$$\begin{aligned}\frac{\partial E(y)}{\partial x_c} &= \frac{\partial (\Pr(y>0) \times E(y|y>0))}{\partial x_c} \\ &= \left(\Pr(y > 0) \frac{\partial E(y|y>0)}{\partial x_c} \right) + \left(E(y | y > 0) \frac{\partial \Pr(y>0)}{\partial x_c} \right).\end{aligned}$$

Similarly, the incremental effect of a dummy variable x_d is

$$\begin{aligned}E(y | x_d = 1) - E(y | x_d = 0) &= \\ &= \left(\Pr(y > 0 | x_d = 1) - \Pr(y > 0 | x_d = 0) \right) \times E(y | y > 0 | x_d = 1) \\ &\quad - \left(\Pr(y > 0 | x_d = 0) - \Pr(y > 0 | x_d = 1) \right) \times E(y | y > 0 | x_d = 0).\end{aligned}$$

In this study, most of the variables are dummy variables, so the key results are the incremental effects of changes in disability rating and various veteran background characteristics on LFP, earnings for workers, and overall earnings.

Our estimation procedures are adjusted for the grouped data characteristic of the regression specifications. The earnings equation is weighted to adjust for the fact the variance of particular cell entries depends on the precision in estimating the natural logarithm of earnings. Similarly, we use blocked probit procedures to control for the number of labor force participants in each cell relative to cell size. Finally, we use sandwich estimators to adjust for repeated annual measures of both earnings and LFP for each cell.

The disability model is further complicated by the fact that civilian earnings are not available for cells with five or fewer individuals. Earnings data are available from the SSA, but the SSA provides only aggregated data to protect the privacy of individuals. This limitation is important for disability analysis, because the incidence of severe disabilities is rare. For example, Figures 3.1 and 3.2 showed that less than 1 percent of enlisted and officer veterans had ratings of 80, 90, or 100 percent. In addition to ratings, our model controls for a broad range of demographic characteristics and military experiences that are likely to affect civilian earnings of veterans. In preliminary analysis, we found that full controls and all ten ratings categories left many small cells (especially for officers and enlisted females). This meant that SSA would suppress the earnings for these groups of veterans, and we would lose critical information about the earnings of veterans in many key groups.

We resolved this small cell issue by using a method called *model averaging* (Hansen, 2007). The method is described in detail in Appendix A. Instead of estimating LFP and earnings with a complete set of controls, we estimated many different models with a subset of controls. The alternative specifications include different combinations of factors, so the differences in results across different specifications reflect the sensitivity of the model to alternative controls. Each model contained disability ratings and specific controls for separation cohort (FY1993 through FY2004) and years of civilian experience after leaving active duty. Subsets of specifications included controls for age at separation from active duty, education level, race/ethnicity, gender (where applicable), disability retirement or severance (where applicable), AFQT (where applicable), service branch, participation in the conflicts in Iraq or Afghanistan from 2001 through 2004, and whether the individual had a competitive promotion in the top 25th percentile of his or her entry cohort. In total, 28 specifications were estimated for each

group of veterans: enlisted males (nonretirees), enlisted females (nonretirees), enlisted nondisability retirees, officer nondisability retirees, and other officers.

Estimation Strategy

We calculated overall coefficients for each group by averaging the effects across the 28 specifications for the LFP and earnings of each group. The average weighted coefficient for each specification depends on the relative fit of each particular specification, where higher weights were drawn from specifications with more explanatory power and lower weights from models that fit less well. Similarly, we computed overall standard errors by combining the results from the alternative specifications and taking into account the sensitivity of model coefficients to alternative specifications.

We tried several extensions of the basic model to examine whether ratings have a differential effect on earnings and LFP over time. First, we added interactions between each of the ratings indicators and an indicator that the veterans had less than three years of civilian experience. The premise of this specification is that disabled veterans may face more difficulties than other veterans in transitioning to the civilian labor market. Second, we interacted each rating indicator with an indicator for the most recent earnings year. The premise here is that initial ratings might understate the longer-term effects of SCDs. Finally, we built a continuous variable that showed the annual difference between the current year rating and the initial rating for each member. If we hold initial ratings constant, higher increases in ratings should be inversely correlated with earnings and LFP. Alternatively, we may find that initial ratings are the main factors affecting labor outcomes, and that subsequent ratings adjustments have little effect on civilian opportunities.

Tables 3.5 and 3.6 show the regression variables for enlisted and officer groups. Each model includes indicators for separation cohort and years of civilian experience. Civilian experience was computed as the difference between the current calendar year and cohort.

Table 3.5
Regression Variable Categories for Enlisted Veterans

| Variable | Enlisted Males | Enlisted Females | Enlisted Nondisability Retirees |
|-------------------------------|---|--|---|
| Disability ratings | No rated SCD,* 10%, 20%, 30%, 40%, 50%, 60–70%, 80–100% | No rated SCD,* 10–20%, 30–40%, 50–60%, 70–100% | No rated SCD,* 10%, 20%, 30%, 40%, 50%, 60–70%, 80–100% |
| Separation cohort | Each year from FY1993 to FY2004, FY1993* | Each year from FY1993 to FY2004, FY1993* | Each year from FY1993 to FY2004, FY1993* |
| Civilian experience | Each year from 1 to 12 years, 1 year* | Each year from 1 to 12 years, 1 year* | Each year from 1 to 12 years, 1 year* |
| Age at separation | Age < 23,* age 23 or 24, age 25, 26, or 27, age > 27 | Age < 24,* age 24–27, age > 27 | Age < 40, age 40–42, age 43–45, age > 45 |
| Education level at separation | Not high school graduate,* high school graduate, some college, B.A. or better | No college,* some college, B.A. or better | Not high school graduate,* high school graduate, some college, B.A. or better |
| Race/ethnicity | White non-Hispanic,* black or African American, Hispanic | White non-Hispanic,* black or African American, Hispanic | White non-Hispanic,* black or African American, Hispanic |
| Deployment | Afghanistan or Iraq tour (2001–2004), no tour in these conflicts* | Afghanistan or Iraq tour (2001–2004), no tour in these conflicts* | Afghanistan or Iraq tour (2001–2004), no tour in these conflicts* |
| Disability separation | Nondisability separation,* disability retirement, disability severance | Nondisability separation,* disability retirement, disability severance | Not applicable |
| AFQT category | Category 1 or 2, category 3a, other* | Category 1 or 2, category 3a, other* | Category 1 or 2, category 3a, other* |
| Military promotion | Top-quartile promotion (E5 or better), other* | Top-quartile promotion (E5 or better), other* | Top-quartile promotion (E5 or better), other* |
| Service | Army,* Navy, Marine Corps, Air Force | Army,* Navy, Marine Corps, Air Force | Army,* Navy, Marine Corps, Air Force |
| Gender | Not applicable | Not applicable | Male,* female |

NOTE: The omitted reference category is indicated by an asterisk after the category.

Table 3.6
Regression Variable Categories for Veteran Officers

| Variable | Nondisability Officer Retirees | Other Officers |
|-------------------------------|--|--|
| Disability ratings | No rated SCD,* 10–20%, 30–40%, 50–60%, 70–100% | No rated SCD,* 10–20%, 30–40%, 50–60%, 70–100% |
| Separation cohort | Each year from FY1993 to FY2004, FY1993* | Each year from FY1993 to FY2004, FY1993* |
| Civilian experience | Each year from 1 to 12 years, 1 year* | Each year from 1 to 12 years, 1 year* |
| Age at separation | Age 43 or less,* age > 43 | Age < 31,* age 31–36, age 37–43, age > 43 |
| Education level at separation | Less than a master's degree,* master's degree, professional degree | Less than a master's degree,* master's degree, professional degree |
| Race/ethnicity | Black or African American, other* | Black or African American, other* |
| Deployment | Afghanistan or Iraq tour (2001–2004), no tour in these conflicts* | Afghanistan or Iraq tour (2001–2004), no tour in these conflicts* |
| Disability separation | Not applicable | Nondisability separation,* disability retirement, disability severance |
| Military promotion | Top-quartile promotion (O4 or better), other* | Top-quartile promotion (O4 or better), other* |
| Service | Army,* Navy, Marine Corps, Air Force | Army,* Navy, Marine Corps, Air Force |
| Gender | Male,* female | Male,* female |

NOTE: The omitted reference category is indicated by an asterisk after the category.

Results

The key overall result is that veteran disability compensation exceeds civilian earnings losses associated with a SCD. Civilian earnings and LFP are inversely related to military ratings, with large reductions in civilian outcomes for veterans with severe disabilities and high ratings. The earnings differential between veterans with no rating and those with a SCD is generally smaller than the rating percentage associated with each SCD. Disability compensation generally more than offsets this earnings differential. Veterans with SCDs gain an additional benefit from the tax-exempt status of military compensation.

Officers with low disability ratings are an exception to the rule, and some are undercompensated for their civilian earnings losses. Their earnings reductions are comparable in percentage terms with those of enlisted personnel, but veteran officers have much greater absolute earnings than do veteran enlisted. The VASRD does not differentiate between officers and enlisted, however, so some officers with low ratings are worse off than their counterparts with no SCD.

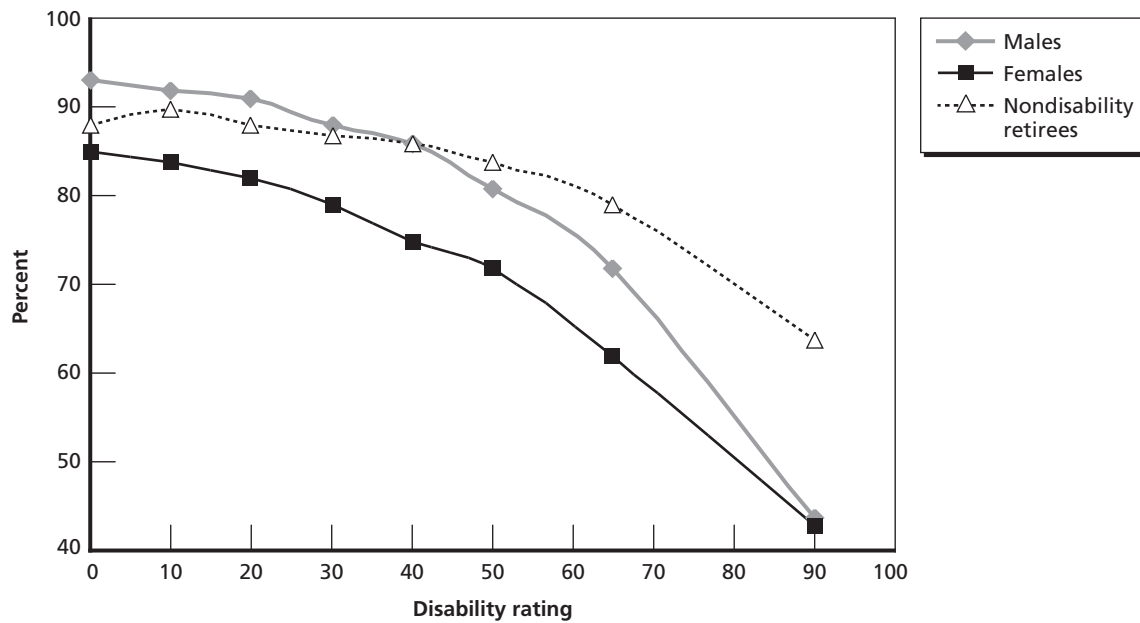
This chapter discusses the results for enlisted and officer veterans. The discussion focuses on how SCDs affect LFP and earnings for the five groups of veterans, conditional on individual background and military experiences that are likely to also affect civilian labor-market outcomes. The detailed regression results for enlisted males, enlisted females, and enlisted nondisability retirees are given in Tables B.1, B.2, and B.3, respectively. The detailed regression results for officer nondisability retirees and other officers are given in Table B.4.¹

Enlisted Veterans

Figure 4.1 shows the relationship between SCD rating and LFP. Veterans with low ratings are nearly as likely to work as those with no SCD. A 30-percent rating is associated with a 5-percentage-point decline in LFP for men and a 6-percentage-point decline for women. The LFP of a typical enlisted nondisability retiree with a 30-percent disability is only one percentage point lower than that of a comparable other retiree with no SCD. The decline in LFP becomes more pronounced at high levels of disability. At 90 percent, enlisted males and females have LFP rates that are only half those of comparable veterans with no disability. Among nondisability retirees, LFP is 64 percent for a veteran with a 90-percent disability as compared with 88 percent for a veteran with no disability.

¹ We also tried an additional specification of our main model that included a variable for whether the veteran had served in a combat occupation while on active duty. The coefficient associated with this variable was insignificantly different from zero for all enlisted and officer groups, so we focused on the specification without the combat variable.

Figure 4.1
Labor Force Participation Percentages for Enlisted Veterans, by SCD Ratings



RAND MG1098-4.1

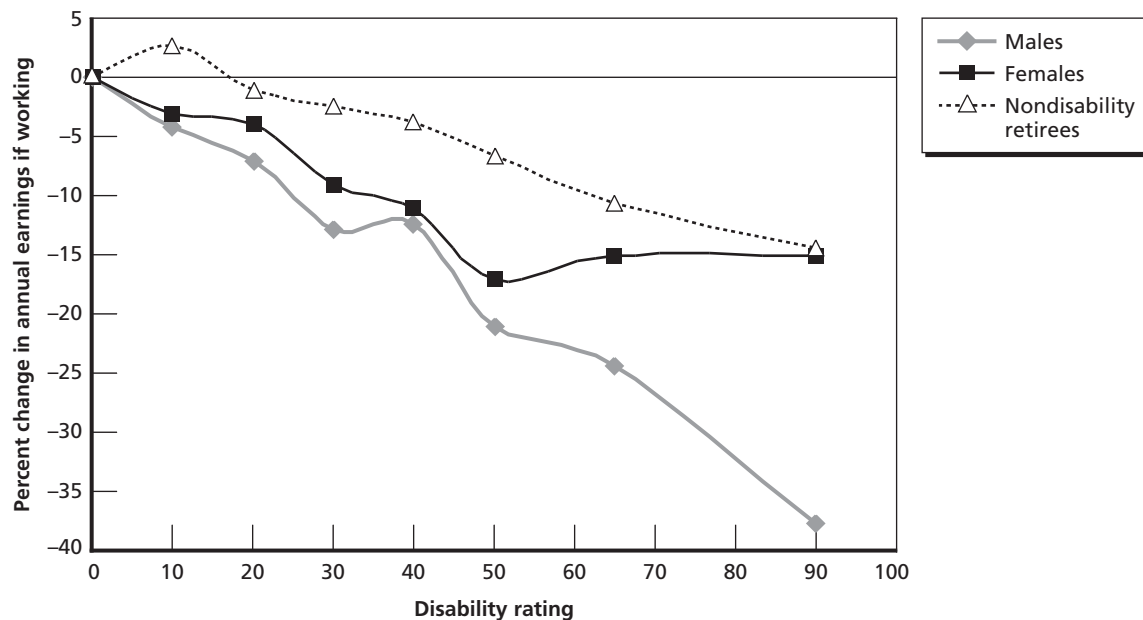
The LFP patterns differ substantially across the three groups of enlisted veterans. Males without a SCD are the most likely group of enlisted veterans to be in the labor force, but their LFP falls off sharply for ratings about 50 percent. Enlisted females have lower LFP than enlisted males, perhaps reflecting women taking time out of the labor force to raise young children.

LFP rates for enlisted nondisability retirees are much less sensitive to disability ratings than are either enlisted males or females. These veterans have successfully completed their military careers and may have learned to adapt to the disability. In addition, VASRD is heavily weighted toward the physical limitations of disabilities (Buddin and Kapur, 2005). The older retiree group generally has more managerial responsibilities and fewer physical demands than the other two enlisted groups. The lower LFP for enlisted males and females may reflect the physical nature of many civilian opportunities available to these veterans.

Civilian earnings of working veterans with SCDs are lower than those of other veterans, but the effects are small for small ratings (see Figure 4.2). Enlisted nondisability retirees with a 50-percent disability have civilian earnings only 6 percent lower than those of comparable retirees with no SCD. The nonretiree groups have larger reductions in earnings—a 50-percent rating reduces earnings by 21 and 17 percent for enlisted males and females, respectively.

The LFP and earnings results for enlisted veterans suggest that civilian earnings losses might be less than the ratings would indicate. By a literal interpretation of the earnings capacity criterion for VASRD (38 CFR 41), a SCD rating of 50 percent *should* indicate that the veteran would have a 50 percent earnings loss. The earnings losses for workers are much lower than this. LFP is inversely related with SCD rating, so the total earnings losses are greater than the losses confined to veterans in the employed civilian workforce. The LFP declines are not

Figure 4.2
Civilian Earnings Effects for Enlisted Veterans, by SCD Ratings



RAND MG1098-4.2

large, however, so the average enlisted veteran with a SCD may have a lower overall earnings loss than his or her rating would suggest.

Table 4.1 shows the overall effect of a SCD on the earnings of enlisted males. The table combines the earnings and LFP effects of a disability, the VA compensation amount for each rating, and the tax advantage of each VA award (disability compensation is not subject to federal income or payroll tax). Finally, we compute the earnings for each rating with these adjust-

Table 4.1
Earnings Losses for Enlisted Males (Excluding Nondisability Retirees)

| Disability Rating | Earnings Effect (%) | Participation Effect (%) | Earnings Differential | VA Compensation | VA + Tax Adv. | Relative Earnings | Relative % |
|-------------------|---------------------|--------------------------|-----------------------|-----------------|---------------|-------------------|------------|
| None | | | | | | | |
| 10 | -4.1 | -0.9 | -1,257 | 1,347 | 1,741 | 484 | 1.6 |
| 20 | -7.1 | -2.3 | -2,310 | 2,618 | 3,385 | 1,075 | 3.5 |
| 30 | -12.9 | -5.5 | -4,368 | 4,639 | 5,997 | 1,629 | 5.3 |
| 40 | -12.3 | -6.8 | -4,569 | 6,696 | 8,657 | 4,088 | 13.2 |
| 50 | -21.1 | -12.1 | -7,480 | 9,422 | 12,181 | 4,701 | 15.2 |
| 60-70 | -24.5 | -21.1 | -9,993 | 15,551 | 20,104 | 10,111 | 32.6 |
| 80-100 | -37.7 | -48.6 | -17,030 | 29,947 | 38,717 | 21,687 | 70.0 |

NOTES: The earnings and participation effects are based on the regressions in Appendix A. The earnings differential is based on the difference between earnings with no rating and those with each rating group based on the two-part model. VA compensation is the average disability compensation for veterans in each rating group. "VA+Tax Adv." is disability compensation adjusted for a 15-percent federal income tax and a 7.65-percent FICA tax. "Relative earnings" is the tax-adjusted disability payment net of the earnings differential. "Relative %" is the earnings advantage for veterans in each group relative to veterans with no SCD.

ments for disability compensation and tax advantage relative to the earnings of similar veterans with no SCD.

Table 4.1 shows that disabilities reduce civilian opportunities for enlisted males, but these reductions are more than offset by disability compensation benefits. The combined effects of disabilities on worker earnings and LFP are a reduction of about \$1,300 for a 10-percent rating (in 2005 dollars). These combined effects grow to an earnings differential of \$17,000 for ratings in the 80- to 100-percent range. While these differentials are large, they are more than offset by the corresponding disability compensation for each rating. The VA compensation becomes more generous relative to the earnings differential for higher ratings, where the disability compensation exceeded earnings for a 40-percent rating by 47 percent (\$6,696/\$4,569) and for the highest rating group by 76 percent (\$29,947/\$17,030). Disability compensation has further advantages for veterans, because these payments are not subject to federal income and payroll tax. When these factors are combined, enlisted males with a SCD are better off than comparable veterans without a SCD—the advantage is only about 2 percent of earnings for a 10-percent rating and rises to 70 percent for a disability in the 80- to 100-percent range.

Table 4.2 shows how SCDs affect the civilian labor-market opportunities of enlisted females. As shown above, both worker earnings and LFP decline less rapidly with ratings for females than for males. In addition, enlisted females have lower earnings than enlisted males. These factors mean that the earnings differentials for enlisted females are smaller than they are for enlisted males. VA compensation does not differentiate between enlisted men and women, so the disability compensation schedule is relatively more generous for women than for men. For ratings of 10 to 20 percent, enlisted females receive disability compensation that is twice the amount of their earnings differential. For ratings of 70 to 100 percent, the compensation is three times the loss in civilian labor-market opportunities. This “extra” compensation relative to the earnings loss is enhanced by the tax advantage of VA benefits, so enlisted females with a SCD have 8 percent more combined earnings than comparable veterans with no SCD. The earnings advantage grows to 119 percent for disability ratings of 70 to 100 percent.

The earnings loss for enlisted nondisability retirees is more complicated than for the other two groups because retirement benefits are offset by disability payments. Prior to 2004, nondisability retirees received the maximum of their retirement or disability compensation. The premise of this approach was that retirement benefits were sufficient compensation for SCDs

Table 4.2
Earnings Losses for Enlisted Females (Excluding Nondisability Retirees)

| Disability Rating (%) | Earnings Effect (%) | Participation Effect (%) | Earnings Differential | VA ompensation | VA + Tax Adv. | Relative Earnings | Relative % |
|-----------------------|---------------------|--------------------------|-----------------------|----------------|---------------|-------------------|------------|
| None | | | | | | | |
| 10–20 | –4.3 | –1.2 | –849 | 1,859 | 2,404 | 1,555 | 7.9 |
| 30–40 | –11.9 | –7.6 | –2,930 | 5,539 | 7,161 | 4,230 | 21.4 |
| 50–60 | –19.6 | –15.3 | –4,969 | 10,923 | 14,121 | 9,152 | 46.4 |
| 70–100 | –14.7 | –38.0 | –7,955 | 24,255 | 31,358 | 23,403 | 118.6 |

NOTES: The earnings and participation effects are based on the regressions in Appendix A. The earnings differential is based on the difference between earnings with no rating and those with each rating group based on the two-part model. VA compensation is the average disability compensation for veterans in each rating group. “VA+Tax Adv.” is disability compensation adjusted for a 15-percent federal income tax and a 7.65-percent FICA tax. “Relative earnings” is the tax-adjusted disability payment net of the earnings differential. “Relative %” is the earnings advantage for veterans in each group relative to veterans with no SCD.

in most cases. Disability benefits did have tax advantages over retirement payments, however, since retirement payments were taxed as income and disability benefits were untaxed.

In 2004, Congress phased in concurrent receipt for servicemembers with a 50 percent or greater disability rating. The disability entitlement was phased in at an accelerated rate over ten years until full disability pay was reached. Nondisability retirees with ratings of less than 50 percent remain subject to the offset rules. In addition, medical retirees with less than 20 years of service are subject to the offset, so only nondisability retirees and disability retirees with 20 or more years of service and with ratings of at least 50 percent are eligible for concurrent receipt.

Table 4.3 shows the combined earnings losses for enlisted nondisability retirees with the additional adjustment for concurrent receipt. The earnings losses for this group are much smaller than for other enlisted veterans. In fact, retirees with ratings of 10 percent actually have higher workforce earnings and LFP than do retirees with no SCD.

VA compensation more than makes up the combined earnings losses of retirees for all ratings groups. The gap between retirees with and without SCDs grows larger after adjusting for the tax advantages of disability compensation. The offset provisions mean that most of the retirement benefits are offset for ratings less than 50 percent. On net, the main advantage of disability compensation for retirees subject to the offset is the tax advantage. On net, enlisted nondisability retirees with ratings less than 50 percent are only slightly better off than comparable retirees with no SCD.

The results are more positive for nondisability retirees who are eligible for concurrent receipt. These retirees receive both retirement and disability payments. These “extra” disability benefits leave these retirees much better off than other comparable retirees.

In addition to disability ratings, the enlisted male and female regression models included controls for whether the veteran was a disability retirement or severance. These variables show

Table 4.3
Earnings Losses for Enlisted Nondisability Retirees

| Disability Rating (%) | Earnings Effect (%) | Participation Effect (%) | Earnings Differential | VA Compensation | VA + Tax Adv. | After Concurrent Receipt | Relative Earnings | Relative % |
|-----------------------|---------------------|--------------------------|-----------------------|-----------------|---------------|--------------------------|-------------------|------------|
| None | | | | | | | | |
| 10 | 2.7 | 1.7 | 1,322 | 1,354 | 1,751 | 397 | 1,719 | 5.0 |
| 20 | -1.0 | 0.2 | -225 | 2,628 | 3,397 | 769 | 544 | 1.6 |
| 30 | -2.4 | -0.6 | -859 | 4,730 | 6,114 | 1,385 | 526 | 1.5 |
| 40 | -3.6 | -1.9 | -1,607 | 6,778 | 8,762 | 1,985 | 377 | 1.1 |
| 50 | -6.5 | -4.0 | -2,988 | 9,543 | 12,338 | 12,338 | 9,350 | 27.4 |
| 60-70 | -10.5 | -8.9 | -5,394 | 13,834 | 17,885 | 17,885 | 12,491 | 36.6 |
| 80-100 | -14.3 | -24.5 | -10,566 | 23,603 | 30,514 | 30,514 | 19,948 | 58.5 |

NOTES: The earnings and participation effects are based on the regressions in Appendix A. The earnings differential is based on the difference between earnings with no rating and those with each rating group based on the two-part model. VA compensation is the average disability compensation for veterans in each rating group. “VA+Tax Adv.” is disability compensation adjusted for a 15-percent federal income tax and a 7.65-percent FICA tax. “After Concurrent Receipt” is the tax-adjusted value of disability compensation where retirement benefits are fully offset by disability payments for ratings less than 50 percent and concurrent receipt for ratings of 50 percent or greater. “Relative Earnings” is the tax- and offset-adjusted disability payment (the “After Offset” column) net of the earnings differential. “Relative %” is the earnings advantage for veterans in each group relative to veterans with no SCD.

whether these veterans have different labor-market outcomes than do other comparable veterans with similar ratings.

Christensen et al. (2007) argued that DoD underrated injuries to veterans with disability severance.² A key factor in this transition is that DoD rates members only on the specific condition that makes them unfit to serve on active duty, whereas the VA rates veterans on all SCDs. This definitional difference and a separate evaluation meant that about 70 percent of veterans with disability severance shift to the VA system.³

In our data, we coded the disability rating of veterans with a disability severance as the rating that they received when they first transitioned to the VA. This rating should reflect their potential civilian earnings loss. Severance cases with no subsequent VA rating are treated as having a rating of 0 percent, but these individuals are likely to have some civilian earnings losses since the rating implied by the severance rules is in the 0- to 20-percent range.

The regression results show that enlisted veterans with either a disability severance or a disability retirement have worse civilian labor-market outcomes than comparable other veterans with the same rating. Table 4.4 shows that both male and female veterans with a disability severance have lower labor force participation and labor-market earnings than comparable other veterans who left active duty with the same ratings. For example, an enlisted male with a disability severance and a subsequent VA rating of 20 percent fares much worse than an enlisted male who completes his active duty service and has a SCD rating of 20 percent. These extra losses for the severance group are sufficient to more than offset the “extra” compensation that we observed above for enlistees with low disability ratings.

The poor outcomes for the severance groups are difficult to explain. One mechanical issue would be if the bad outcomes were linked to severance cases in which the veteran was not reassessed by the VA. The severance amount should cover some earnings loss for these veterans, but they are recorded in the data as having no rating unless they transition to the VA. While this explanation is plausible, the evidence refutes it for the bad outcomes in the severance group.

Table 4.4
Earnings Losses for Enlisted Disability Retirements and Severances

| Characteristic | Earnings Effect (%) | Participation Effect (%) | Earnings Differential |
|-----------------------|---------------------|--------------------------|-----------------------|
| Enlisted males | | | |
| Disability retirement | -12.4 | -9.4 | -5,178 |
| Disability severance | -12.9 | -2.4 | -3,634 |
| Enlisted females | | | |
| Disability retirement | -18.8 | -12.0 | -4,344 |
| Disability severance | -19.2 | -3.9 | -3,233 |

² Repayment of the lump sum disability severance was required before the veteran was entitled to receive the VA disability annuity.

³ Disability severance was modified in 2008, but the new rules do not apply to members in our sample who left before that date. Under the old rules, a disability severance entitled a member to two months of basic pay for each year of active duty up to 12 years. Veterans were eligible for VA benefits if they repaid the severance amount. Since 2008, the minimum severance payment is based on 12 months of basic pay for combat zone disabilities and 6 months for other injuries. The payments are now capped at 38 months of basic pay. When veterans shift to the VA, they now do not need to repay the disability severance if their disability occurred in a combat zone or while undertaking duties in combat-related operations.

We found that severance cases who transitioned to the VA had worse labor-market outcomes than those who did not, but the differentials shown in Table 4.4 are consistent for both groups.

Why does the severance group have such bad outcomes? Perhaps these veterans have different types of disabilities than other veterans with the same ratings, and these SCDs tend to have more-adverse effects on labor-market outcomes. This possibility could be explored with detailed information on disabilities, but we did not have this type of information for this study. Another explanation is that veterans who are pushed out of active duty for medical issues have conditions that may become more limiting over time than do other veterans that have a comparable disability rating. Further research is needed to identify the underlying explanation of why veterans with disability severance fare so much worse than other veterans in civilian labor markets.

The other issue in Table 4.4 is that enlisted disability retirees also have much worse labor-market outcomes than other veterans with comparable ratings. A disability retiree with a 30-percent disability has lower workforce earnings and lower LFP than a comparable other veteran who completes his or her active duty term and has a 30-percent rating. As with the severance group, the explanations for the bad labor-market outcomes of disability retirees are unclear, but the gaps in civilian outcomes merits further study.

The models also include indicators for whether the veteran served in the Afghanistan or Iraq conflicts between 2001 and 2004. Recent research has suggested that many may have undiagnosed PTSD. If so, these veterans might have greater difficulty obtaining and keeping civilian employment or have difficulty performing at a civilian job than a comparable veteran who was not deployed in these conflicts and is unlikely to suffer from undiagnosed PTSD.

The evidence shows that enlisted veterans with Afghanistan or Iraq tours are doing worse in civilian labor markets than other veterans (see Table 4.5). The reductions in labor-market earnings are statistically significant for both males and nondisability retirees. LFP also declines, but the effect is not statistically significant for nondisability retirees. The results for Afghanistan or Iraq veterans are conditional on disability rating, so these veterans are consistently doing worse than other comparable veterans, even conditioning on any recorded disability.

The results for Afghanistan or Iraq veterans are interesting, but the effects of these deployments on civilian earnings should be tracked in future research. A limitation of this research is that we observed only veterans who left through 2004. Those veterans are from the early stages of the Iraq and Afghanistan conflicts and may not be representative of subsequent cohorts serving during periods of more conflicts and casualties. Also, we are unable to separate out alternative explanations, in addition to undiagnosed PTSD, that might explain the more adverse civilian outcomes for Afghanistan or Iraq veterans. Several explanations are possible. First, these veterans might be more focused than others on going to college after leaving active duty. As a result, some may have reduced earnings from part-time work while in col-

Table 4.5
Earnings Losses of Enlisted Members with Tour in Afghanistan or Iraq
(2001–2004)

| Group | Earnings Effect (%) | Participation Effect (%) | Earnings Differential |
|---------------------------------|---------------------|--------------------------|-----------------------|
| Enlisted males | –13.2 | –0.8 | –3,275 |
| Enlisted females | –5.5 | –1.7 | –508 |
| Enlisted nondisability retirees | –5.1 | –0.2 | –1,467 |

lege or reduced LFP while they are full-time students. Second, Afghanistan or Iraq veterans may rely on extra combat pay from a deployment to reconnect with family members or take extra time searching for a better civilian job match. Third, some employers may be reluctant to hire these veterans, because they worry about the incidence of latent PTSD in this veteran population. Further research is needed to sort out whether the reduced earnings of these veterans persist or whether the short-term effects reported here are related to more college attendance, an intentional reduction in labor-market activity, or a more deliberate search for civilian employment.

We also tried several extensions of the main model to investigate how SCDs affected the timing of labor-market success. Disabled veterans might have more difficulty than other comparable veterans in transitioning to civilian employment. We tested this premise by comparing the earnings and LFP of disabled veterans during the first two years of civilian experience with their subsequent civilian outcomes. The model controls for civilian experience, so our ratings effects are conditional on experience and other factors.

The results (see Appendix Tables C.1 through C.3) show that the annual earnings of employed veterans with SCDs are not significantly different during the first two years of civilian experience than for years 3 through 12. This finding holds for enlisted men, women, and nondisability retirees. The LFP equations show that veterans with SCDs had slightly higher LFP during these initial two years than for subsequent years. Since most enlisted veterans are working, the magnitude of these positive effects is small. SCDs have an adverse effect on civilian earnings and LFP, but our results show that these effects are not concentrated on their initial transition to civilian employment.

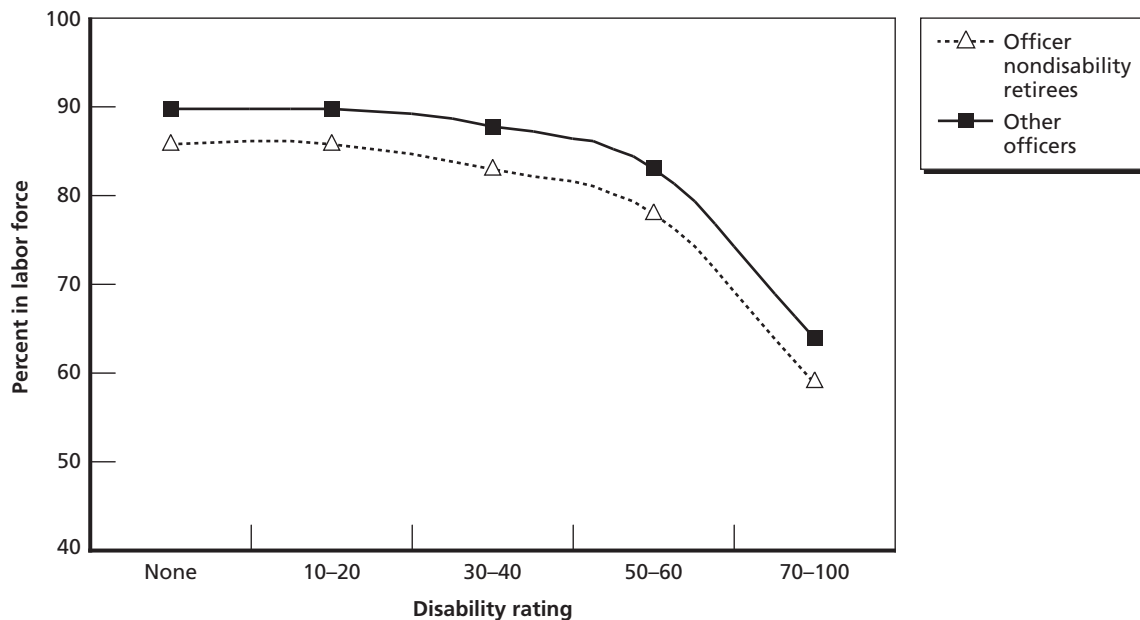
We also examined whether SCDs had a differential effect on the most recent earnings of veterans (i.e., earnings in 2005). Our ratings variable is based on each veteran's initial rating from DoD or the VA. These initial ratings might understate longer-term effects of disabilities because the veteran's SCD impairment increases.

The results (see Tables D.1 through D.3) show little, if any, difference in the earnings or LFP for 2005 than for prior years. This finding holds for all three enlisted groups (men, women, and nondisability retirees). The evidence suggests that initial ratings are a good indication of labor-market outcomes over the intermediate term of up to 12 years of civilian experience.

Finally, we modified our basic model to include a measure of how the average ratings change (relative to the initial rating) over time for each year of our analysis. The DoD and VA records include annual measures of ratings, and Table 3.1 showed that these ratings trended upward slightly with years of civilian experience. The SSA aggregation rule prevented us from comparing individual earnings and LFP before and after a rating change. Average earnings and LFP of each cell should be inversely related to the average rating change for the cell, if rating increase has a detrimental effect on labor-market outcomes.

The results (see Tables E.1 through E.3) show that the average change in rating has no significant effect on civilian earnings of labor force participants. LFP does decline for enlisted males and nondisability retirees when ratings increase from their initial level. Rating change has no significant effect for enlisted women. In individual cases, civilian labor-market outcomes may decline as SCD impairment increases—indeed, some veterans probably return to the VA for reevaluation because their condition worsens and has an adverse effect on their civilian employment. Our evidence suggests that, on average, changes in ratings over time have a small incremental effect on earnings and LFP beyond initial ratings.

Figure 4.3
Labor Force Participation Percentage for Veteran Officers, by SCD Ratings



RAND MG1098-4.3

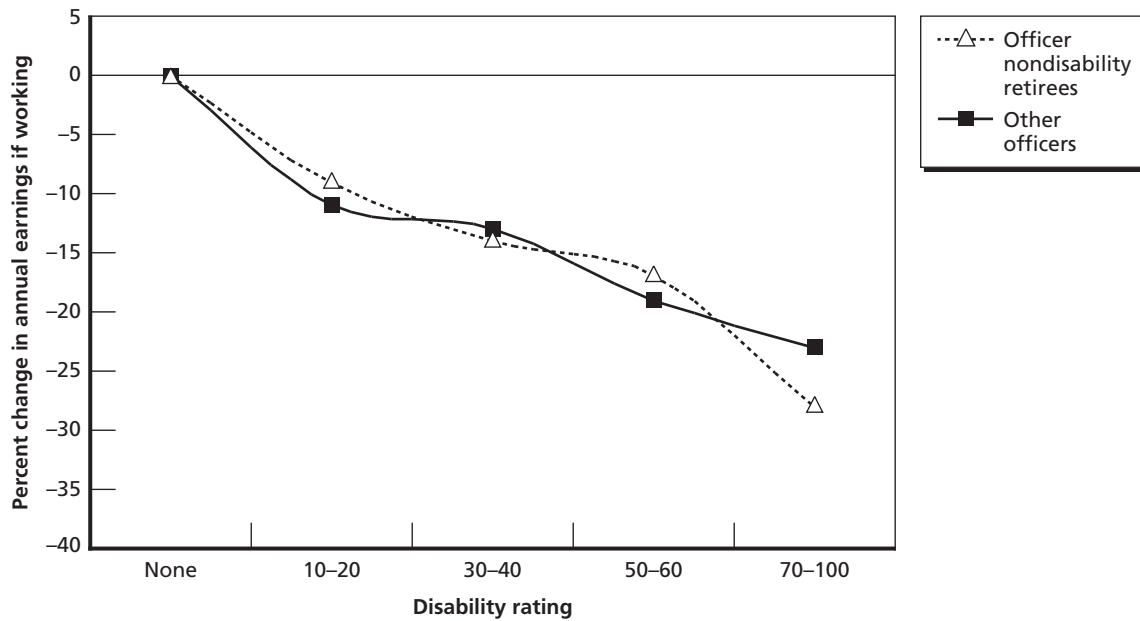
Officer Veterans

SCDs have a weaker effect on LFP for officers than for enlisted male and female groups, but the effect is similar to that for enlisted nondisability retirees (see Figure 4.3). Officers with ratings of 10–20 percent have participation rates no different from those of officers with no SCDs. Ratings in the 50–60 range are associated with a reduction of LFP of only about 8 percentage points. LFP is consistently lower for officer nondisability retirees than for the other-officer group. This difference reflects older veterans reducing their LFP, and this effect is enhanced by military retirement benefits that may enable some retired officers to leave the civilian labor force.

Among working veterans, earnings are inversely related to the rating and similar for retirees and other officers (see Figure 4.4). Officer retirees with ratings of 70 to 100 percent do earn about 6 percentage points lower per year than other officers with a similar rating. The earnings effect for other officers are smaller than those for either enlisted males or females (enlisted personnel who also leave before nondisability retirement).

We have no specific evidence on why SCD ratings have a smaller effect on LFP and earnings for officers than for enlisted personnel. Two hypotheses may explain these results. First, enlisted personnel may have labor-market skills that are more physically demanding than officers. VASRD emphasizes the physical limitations of SCDs, and veteran officers may have better opportunities for managerial or less-physical jobs than enlisted veterans. Second, veteran officers are better educated than enlisted veterans and have high civilian wages, and officer retirees receive larger retirement benefits than enlisted retirees. Given their extra wealth, veteran officers may work less than enlisted veterans, irrespective of their rating. Similarly, former offi-

Figure 4.4
Civilian Earnings Effects for Veteran Officers, by SCD Ratings



RAND MG1098-4.4

cers might expect less-demanding employment with more amenities because they face fewer financial pressures than former enlisted members.

Table 4.6 shows the overall effects of ratings on the earnings losses of officer nondisability retirees. The earnings differentials are much larger for officer nondisability retirees than for enlisted nondisability retirees. While there are some differences in the sensitivity of these two groups to ratings, the primary difference reflects the much higher earnings of officers relative to those of enlisted members, i.e., Table 3.2 showed that officer nondisability retirees had average

Table 4.6
Earnings Losses for Officer Nondisability Retirees

| Disability Rating (%) | Earnings Effect (%) | Participation Effect (%) | Earnings Differential | VA Compensation | VA + Tax Adv. | After Concurrent Receipt | Relative Earnings | Relative % |
|-----------------------|---------------------|--------------------------|-----------------------|-----------------|---------------|--------------------------|-------------------|------------|
| None | | | | | | | | |
| 10-20 | -9.2 | -0.5 | -4,847 | 1,924 | 2,857 | 933 | -3,915 | -5.8 |
| 30-40 | -13.8 | -2.9 | -8,196 | 5,772 | 8,570 | 2,798 | -5,398 | -8.0 |
| 50-60 | -17.4 | -7.9 | -12,257 | 10,892 | 16,172 | 16,172 | 3,916 | 5.8 |
| 70-100 | -28.3 | -27.3 | -25,122 | 21,397 | 31,770 | 31,770 | 6,648 | 9.8 |

NOTES: The earnings and participation effects are based on the regressions in Appendix A. The earnings differential is based on the difference between earning with no rating and that with each rating group based on the two-part model. VA compensation is the average disability compensation for veterans in each rating group. "VA+Tax Adv." is disability compensation adjusted for a 25-percent federal income tax and a 7.65-percent FICA tax. "After Concurrent Receipt" is the tax-adjusted value of disability compensation where retirement benefits are fully offset by disability payments for ratings less than 50 percent and concurrent receipt for ratings of 50 percent or greater. "Relative Earnings" is the tax- and offset-adjusted disability payment (the "After Offset" column) net of the earnings differential. "Relative %" is the earnings advantage (negative numbers mean a disadvantage) for veterans in each group relative to veterans with no SCD.

earnings twice those of enlisted nondisability retirees. VA disability compensation is primarily determined by rating, so officer compensation is no higher than that of enlisted veterans with a similar rating. Disability payments are tax exempt, but they are offset by retirement earnings for officer nondisability retirees with ratings less than 50 percent. The overall picture is that retired officers with ratings of 10 to 40 percent have earnings losses of 6 to 8 percent relative to comparable other veterans with no SCD. Concurrent receipt allows officers with ratings greater than 50 percent to more than recoup the earnings differentials at these ratings with the disability compensation adjusted for tax advantages. Even with concurrent receipt, however, the relative earnings gain of nondisability officer retirees is much smaller than that of nondisability enlisted retirees.

The other officer group does not have retirement earnings offset disability compensation (except for a small number of disability retirees with at least 20 years of service). Table 4.7 shows that this group has an earnings differential similar to that of officer nondisability retirees for each rating group. Other officers with ratings of 10 to 20 percent have an annual earnings loss of about 4 percent. Other officers with ratings greater than 50 percent have slightly better financial outcomes relative to comparable other officers. The rate of “extra” compensation associated with SCDs is much lower for officers than for either the enlisted male or female groups above.

Both officer groups with SCDs fare worse in terms of relative earnings losses than enlisted veterans. The primary reason for this is that the officers have better civilian earnings prospects than enlisted veterans. The disability compensation schedule ignores this earnings gap and leaves the officers with overall earnings losses at low ratings levels and only small earnings gains at high ratings levels.

The other-officer group includes officer veterans who left active duty early with either a disability severance or a disability retirement. Officers are less likely to be deemed unfit for service; 1.2 percent of these officers receive a disability severance and another 3.1 percent receive a disability retirement.

Table 4.8 shows that these early medical separations are associated with adverse labor-market consequences relative to their respective rating. Officers with a disability retirement have LFP that is 18 percentage points lower than officers who had a similar disability rating but left the service under normal circumstances. Among workers, disability retirement is associated

Table 4.7
Earnings Losses for Other Officers

| Disability Rating (%) | Earnings Effect (%) | Participation Effect (%) | Earnings Differential | VA Compensation | VA + Tax Adv. | Relative Earnings | Relative % |
|-----------------------|---------------------|--------------------------|-----------------------|-----------------|---------------|-------------------|------------|
| None | | | | | | | |
| 10–20 | –10.5 | –0.4 | –5,876 | 1,924 | 2,856 | 933 | –3.8 |
| 30–40 | –13.0 | –2.5 | –8,272 | 5,836 | 8,665 | 393 | 0.5 |
| 50–60 | –19.3 | –7.3 | –13,717 | 11,005 | 16,340 | 2,623 | 3.4 |
| 70–100 | –23.4 | –26.5 | –24,958 | 18,736 | 27,819 | 2,861 | 3.8 |

NOTES: The earnings and participation effects are based on the regressions in Appendix A. The earnings differential is based on the difference between earning with no rating and that with each rating group based on the two-part model. VA compensation is the average disability compensation for veterans in each rating group. “VA+Tax Adv.” is disability compensation adjusted for a 25-percent federal income tax and a 7.65-percent FICA tax. “Relative Earnings” is the tax-adjusted disability payment net of the earnings differential. “Relative %” is the earnings advantage (negative numbers mean a disadvantage) for veterans in each group relative to veterans with no SCD.

Table 4.8
Earnings Losses for Officer Disability Retirements and Severances

| Characteristic | Earnings Effect (%) | Participation Effect (%) | Earnings Differential |
|-----------------------|---------------------|--------------------------|-----------------------|
| Disability retirement | -26.8 | -18.1 | -21,774 |
| Disability severance | -13.8 | -5.6 | -10,296 |

with a 27-percent reduction over and above what their rating would suggest. The combined effect of lower LFP and reduced earnings leaves officer disability retirees with an earnings deficit of almost \$22,000.

About 70 percent of officer severance losses are reassessed and given a rating by the VA. Only about 45 percent of these officers receive a rating of 10 or 20 percent as suggested by the criteria for DoD severance. The high ratings may be based on additional SCDs that did not make the officers unfit for active duty or differences in DoD and VA ratings for comparable SCDs.

Severance losses also have poorer civilian outcomes than other officers with similar ratings. Severance veterans have LFP that is 6 percentage points lower for comparable other officers with similar ratings. Similarly, severance officers earn about 14 percent less in the labor force than do comparable other officers. The extra earnings deficit for severance officers is \$10,296.

As discussed above for enlisted veterans, there is no obvious explanation for why officers with disability severance or disability retirement have much worse civilian labor-market outcomes than comparable other officers with similar ratings. The numbers and shares of officers in these groups are much smaller than for the enlisted ranks. Further research is needed to identify why the disability compensation system produces such large economic losses for the officers with medically related separations.

Deployment in Afghanistan or Iraq did not have a statistically significant effect on the LFP or earnings of either officer group. This result may be dictated by the fact that the active force has many more enlisted members than officers, so we estimate any possible effect with less precision for officers. In addition, our data include only separations through 2004. More-recent cohorts would include more officers with Afghanistan or Iraq experience and more years of civilian labor-market activity. Additional research is needed to identify whether officers with tours in Afghanistan or Iraq are having adverse civilian outcomes similar to those of enlisted personnel.

Our expanded model for officers shows that employed nondisability retirees with SCDs fare no better or worse in their initial transition to civilian life than in the next few years (see Table C.4). As with enlisted veterans, disabled officer retirees have higher LFP in the first two years than in subsequent years. The story is a little different for officers who are not retirees. Among other officers, employed veterans with ratings of 30–40 percent and 50–60 percent have higher earnings after initially leaving active duty than in subsequent years. LFP for the highest ratings are also higher in the first two years than in later years. As with enlisted members, officers with SCDs do not face more adverse labor-market outcomes in their initial transition to civilian life than they do in the next several years.

Table D.4 compares earnings and LFP for officers in 2005 with those values in previous years. The results show that both earnings and LFP in 2005 were about the same as in previous years. Since the model conditions on initial civilian ratings, this evidence suggests that the initial ratings are a good indication of how well veterans in the labor force fare over the first 12 years of civilian experience.

Finally, we examined how the average change in rating affected officer veterans' earnings and LFP. The results (see Table E.4) show that increments in veteran ratings have no significant effect on labor force outcome either for nondisability retirees or for the other-officer group.

Conclusions

In recent separation cohorts, we found that veterans with SCDs had lower earnings than comparable other veterans without SCDs. The magnitude of these earnings losses increased with SCD rating. In most cases, VA and DoD disability compensation (adjusted for the tax advantage of disability payments and concurrent receipt for nondisability retirees with ratings of 50 percent or higher) was more than adequate to offset losses at all ratings levels. In general, veterans with SCDs are better off financially than other similar veterans without a SCD.

The relationship between earnings losses and disability ratings differs substantially between enlisted and officer personnel and between nonretirees and retirees. Other things being equal, rated SCDs have a much smaller effect on enlisted nondisability retirees than on other enlisted veterans (disability severances, disability retirees, and nondisability separatees who leave before eligibility for military retirement benefits). Ratings also have a weaker effect on labor-market success of officers than on that of enlisted veterans.

Veterans with disability separations from the military have worse civilian labor-market outcomes than comparable other veterans with nondisability separations. Veterans with a disability severance or a disability retirement have larger earnings losses than comparable other veterans with the same disability rating (even when both groups are rated by the VA).

We also found that earnings losses from SCDs were not concentrated in the first few years of civilian workforce experience. Veterans with SCDs fare worse than other similar veterans in the civilian sector, but the deficit is relatively consistent over the first 12 years of civilian experience. Similarly, we found that changes in ratings after leaving active duty had small effects on civilian earnings losses after controlling for the initial rating of each veteran.

Based on our findings, we strongly suspect that disability compensation for all cohorts of veterans with SCDs exceeds the average earnings losses for those veterans. Since we only looked at earnings for 12 recent cohorts, it is possible that the “extra” compensation in these cohorts is entirely offset by “insufficient” compensation for veterans from earlier cohorts. Many veterans who left active duty before FY1993 are now retiring from the civilian labor force. Veterans with SCDs are better off financially than other veterans in their “golden years,” because they receive disability compensation with no current civilian earnings loss.

Perhaps disabled veterans’ payments compensate for QOL over and above the earnings losses associated with their injuries, but we are not convinced that the VASRD reflects QOL losses in any meaningful way. DoD and VA do not collect information on how SCDs impede the functionality of veterans. This type of information would be needed to quantify QOL losses and is not reflected in the VASRD.

We have several recommendations for policy.

Better Define the Objectives of Disability Compensation

Congress and program managers should better define the goals and objectives of disability compensation. Policymakers and researchers struggle with what exactly “average earnings loss” means and the implicit intent of disability regulations. The regulations should spell out the purpose of the program and what exactly should be the basis of compensation awards. Perhaps this would include compensation for QOL or loss of functioning, among other things.

Update VASRD

VASRD should reflect changes in modern medicine and the limitations of SCDs in the current labor market. The VA should explicitly measure how SCDs affect veteran functionality and integrate this information into the VASRD. If nonwork limitations or QOL are objectives of disability compensation, then these factors should be explicitly built into the VASRD along with earnings losses. Regular review of the VASRD is needed to ensure that the ratings are consistent with the goals and objectives of disability compensation.

Model Averaging

In this appendix, we present our statistical approach in more detail. We first introduce the data aggregation procedure for requesting data from SSA. Next, we briefly review the model averaging method in general. Finally, we present our specific model averaging approach in this application.

Data Aggregation

For privacy reasons, the SSA does not disclose individual-level civilian earnings data. The SSA does provide aggregated earnings data to researchers, provided the data are aggregated into *cells* of no fewer than five observations. We provided SSA with individual identifiers for groups of individuals and requested descriptive statistics for each cell, including counts, means, medians, standard deviations, and quartiles. To accommodate the potential variance inflation and/or deflation in earnings, we also requested the same summary statistics for log earnings, which excludes observations with zero earnings. Therefore, we can also derive the proportion of individuals with zero earnings or nonzero earnings in each cell.

We utilized a list of factors to aggregate individuals into summary cells. Such a list of factors is referred to as an aggregation scheme, or simply a *scheme*. A continuous covariate is generally not suitable in a scheme. Instead, it can be stratified to a factor with ordinal levels. For example, a simple aggregation scheme consists of three factors: gender, disability rating (stratified into several levels), and education level. The SSA did allow us to submit multiple aggregation schemes in this analysis. The cell summary statistics of these aggregation schemes serve as the basis of the statistical analysis in this report.

This study involved a rich list of factors. The saturated scheme that includes all factors, however, is not feasible. Cells with fewer than five observations are called *tiny cells*. To protect confidentiality, descriptive statistics cannot not be disclosed for tiny cells. The saturated scheme leads to many tiny cells and therefore results in a considerable proportion of missing data. In particular, almost all cells corresponding to high disability rating levels under the saturated scheme are tiny, so that we do not have data for high disability rating levels. Unfortunately these cells are of particular importance to this study.

Therefore, each aggregation scheme can only use a part of the available factors. In so doing the counts of individuals in each cell can increase, and there will be fewer tiny cells. In addition, an aggregation scheme also needs to avoid *small cells*, which are cells having no fewer than five but less than 25 subjects. It is possible that the individual-level labor earnings could have missing data. If some individuals in a small cell have missing information, then this small

cell will have even fewer individuals and is in fact a tiny cell. However, we cannot tell these two types of cells apart without access to the individual-level data. Cells with at least 25 counts are called *big cells*. To be conservative, we assumed that only the big cells had the full set of descriptive statistics for analysis.

We used the following guidelines to choose a suitable working scheme. First, a scheme should have the main factor(s) of interest, i.e., disability rating. We also included indicator variables for separation cohort and years of civilian experience in each scheme. Second, while keeping the proportion of small and tiny cells low, a scheme should have as many factors as possible. In particular, we needed to guarantee as few tiny and small cells as possible for high disability rating levels. Third, no two schemes can have a nesting relationship, i.e., each scheme must have a distinct factor compared with any other scheme. According to these guidelines and subject to the limit of cost, we chose 28 aggregation schemes that satisfied all three guidelines.

Models and Model Averaging

Each scheme gives a data set with one observation for each big cell. Some small cells may have observations as well. This data set allows us to fit a linear model of the following form:

$$Y_s = \mu_s + e_s, \quad (1)$$

where Y_s is the aggregated response, e.g., sample mean of log civilian earnings, μ_s is the true cell mean, and e_s is the error term. The vector \mathbf{s} is a surrogate for a combination of all factor levels in the scheme. For simplicity, the cell mean μ_s is modeled as an additive function of all factor levels. Noting that e_s is heteroskedastic due to differences in cell sizes, we can use the generalized least square (GLS) method to fit model (1). For a factor that is common among several working schemes, e.g., disability rating, there are multiple estimates for the effects of these factors. Similar to (1), we can model the probability of nonzero earnings p_s through the probit link

$$\Phi^{-1}(p_s) = \eta_s. \quad (2)$$

Ideally, models (1) and (2) should be fitted to the saturated scheme. Hence, in estimating the effect of key factors, all other relevant factors can be controlled. However, a working scheme has to drop one or more (usually control) factors. Since cell sizes are generally unequal, one cannot assume that the effects of the control factors and factors of interest are orthogonal. Consequently, compared to the ideal model for the saturated scheme, model estimates for any working scheme will be biased.

In order to correct the potential biases in each model and form a unique set of estimates, we applied a statistical approach called model averaging (MA). The MA approach can combine the results from many competing models with no nesting relationship (Hoeting et al., 1999). We prefer MA to the standard model selection technique. The latter often ignores the uncertainty in choosing the model (Hoeting et al., 1999). In particular, for our study it is likely that each working scheme has its own strength and limit, such that a best working scheme does not necessarily exist. Alternatively, the MA technique is particularly suitable for our study, since it does not require a best model among all candidates.

The general procedure of MA consists of the following two major steps. First, a few candidate models are fitted by standard procedures separately. Second, the weighted average of the estimates from all candidate models forms the final estimates, where an appropriate measure of goodness-of-fit is used as the weight. Let θ be a parameter in common in k candidate models. Then the model averaging estimator for θ is (Buckland, Burnham, and Augustin, 1997)

$$\hat{\theta} = \sum_{i=1}^k w_i \hat{\theta}_i \quad (3)$$

where w_i is the weight and $\hat{\theta}_i$ is the estimate for the i th candidate model. For a parameter not in common for all models, only those models having this parameter are included in the model averaging process.

The model-averaging estimator for standard errors is more complicated. Due to the covariance among all $\hat{\theta}_i$ and the bias of $\hat{\theta}_i$, the standard error of $\hat{\theta}_i$, denoted by $s.e.(\hat{\theta})$ hereafter, usually does not equal a simple weighted average of the standard errors of all candidate models. Buckland et al. (1997) suggested the following two estimators for averaging standard errors:

$$s.e.(\hat{\theta}) = \sqrt{\sum_{i=1}^k w_i^2 [\text{var}(\hat{\theta}_i | \beta_i) + \beta_i^2]}, \quad (4)$$

$$s.e.(\hat{\theta}) = \sum_{i=1}^k w_i \sqrt{\text{var}(\hat{\theta}_i | \beta_i) + \beta_i^2}, \quad (5)$$

where β_i is the bias in $\hat{\theta}_i$, and $\text{var}(\hat{\theta}_i | \beta_i)$ is the regular variance estimate of the i th model. In practice, β_i is estimated by $\hat{\theta}_i - \hat{\theta}$. Both (4) and (5) are based on some simplification assumptions. Equation (4) assumes no correlation and (5) assumes perfect correlations among all $\hat{\theta}_i$. Thus, (4) provides a rough lower bound and (5) gives an upper bound for $s.e.(\hat{\theta})$. Namely, inferences based on (4) give more liberal results, and inferences based on (5) are conservative.

The weights w_i are important in the model averaging process. In the existing literature, the weight usually takes the form of L^0 penalized likelihood. The L^0 penalized likelihood, better known as the information criterion, is the ordinary log likelihood minus a penalty term. The penalty is usually a function of the sample size n and the dimension of a model p . Specific information criteria used in the existing MA literature include, for example, Akaike's information criterion (Buckland, Burnham, and Augustin 1997), Bayesian information criterion, or a numerical simulation such as the reversible jumping Markov chain Monte Carlo algorithm (Hoeting et al., 1999; Congdon, 2007), the focus information criterion (Hjort and Claeskens, 2003), and Mallows's C_p (Hansen, 2007).

Our MA Approach

As discussed above, the weight in an MA approach is usually L^0 penalized likelihood. However, the L^0 penalty is unnecessary in our application. Note that the dimensions of our 28

candidate models have little variation. Most candidate models have about 35 free parameters. The smallest model has 33 and the largest model has 37 free parameters. Consequently, the penalty term is almost identical among candidate models. Moreover, the large sample size of our application results in relatively large log likelihood, which completely dominates the usual L^0 penalty terms. Therefore, we can safely use the log likelihood without penalty in MA, which is nearly equivalent to using various types of information criteria for our application.

However, the log likelihoods in the statistical software outputs cannot be directly used as weights in applying MA. Each candidate model corresponds to a distinct set of input data, i.e., the cells of a working scheme. The log likelihoods for different input data sets are not directly comparable. To tackle the difficulty of noncomparable log likelihoods in our study, we calculate the log likelihoods for the same input data set. An obvious choice for this input data set is the original individual-level data. Given the same input data set, the log likelihood is equivalent to mean squared error (MSE). Although the individual-level response is not available to us, the summary statistics under each scheme in conjunction with the estimates of the corresponding candidate model suffice to calculate the MSE.

For log earnings,

$$MSE \approx \frac{\sum_{i=1}^c [(n_i - 1)s_i^2 + n_i \bar{Y}_i^2 - 2n_i \bar{Y}_i \hat{\mu}_i + n_i \hat{\mu}_i^2]}{n}, \quad (6)$$

where n_i is the count of individuals, s_i is the sample standard deviation, \bar{Y}_i is the sample mean, and $\hat{\mu}_i$ is the estimated mean, all for the i th cell; n is the total sample size, and c is the total count of cells. Note that in (6), since the dimensions of candidate models are very small compared to the total sample size, we set the denominator of (6) equal to the sample size.

For the probability of zero earnings, we can directly write the log likelihood as

$$\sum_{i=1}^c [n_i r_i \log \hat{p}_i + n_i (1 - r_i) \log(1 - \hat{p}_i)], \quad (7)$$

where n_i is still the count of individuals, r_i is the sample proportion of zero earnings, and \hat{p}_i is the estimated probability of zero earnings, all for the i th cell.

Primary Regression Results

Table B.1
Regression Results for Enlisted Men

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------|----------------------|----------------------|
| 10% disability rating | -0.0408* (0.0151) | -0.0636* (0.0190) |
| 20% disability rating | -0.0707* (0.0203) | -0.1466* (0.0246) |
| 30% disability rating | -0.1290* (0.0292) | -0.3117* (0.0679) |
| 40% disability rating | -0.1229* (0.0337) | -0.3737* (0.0669) |
| 50% disability rating | -0.2113* (0.0468) | -0.5830* (0.1135) |
| 60–70% disability rating | -0.2452* (0.0618) | -0.8735* (0.0926) |
| 80–100% disability rating | -0.3768* (0.1230) | -1.5932* (0.1259) |
| FY1994 separation cohort | 0.0312* (0.0139) | -0.0052 (0.0072) |
| FY1995 separation cohort | 0.0772* (0.0146) | 0.0018 (0.0095) |
| FY1996 separation cohort | 0.1165* (0.0144) | 0.0079 (0.0081) |
| FY1997 separation cohort | 0.1498* (0.0138) | 0.0001 (0.0085) |
| FY1998 separation cohort | 0.1695* (0.0178) | -0.0082 (0.0093) |
| FY1999 separation cohort | 0.1668* (0.0189) | -0.0215* (0.0108) |
| FY2000 separation cohort | 0.1335* (0.0230) | -0.0669* (0.0128) |
| FY2001 separation cohort | 0.1257* (0.0233) | -0.1154* (0.0175) |

Table B.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|-----------------------------------|----------------------|----------------------|
| FY2002 separation cohort | 0.0050 (0.0247) | -0.2212* (0.0223) |
| FY2003 separation cohort | -0.0133 (0.0276) | -0.2844* (0.0288) |
| FY2004 separation cohort | -0.0064 (0.0343) | -0.2835* (0.0341) |
| 2 years of civilian experience | 0.1634* (0.0066) | -0.0311* (0.0048) |
| 3 years of civilian experience | 0.2731* (0.0110) | -0.0805* (0.0079) |
| 4 years of civilian experience | 0.3655* (0.0161) | -0.1179* (0.0104) |
| 5 years of civilian experience | 0.4475* (0.0210) | -0.1642* (0.0122) |
| 6 years of civilian experience | 0.5098* (0.0241) | -0.2117* (0.0146) |
| 7 years of civilian experience | 0.5557* (0.0256) | -0.2624* (0.0159) |
| 8 years of civilian experience | 0.5873* (0.0250) | -0.3163* (0.0153) |
| 9 years of civilian experience | 0.6200* (0.0232) | -0.3721* (0.0145) |
| 10 years of civilian experience | 0.6562* (0.0235) | -0.4094* (0.0146) |
| 11 years of civilian experience | 0.7058* (0.0250) | -0.4458* (0.0164) |
| 12 years of civilian experience | 0.7370* (0.0274) | -0.4812* (0.0191) |
| Age 23 or 24 at separation | 0.1114* (0.0138) | -0.0214* (0.0080) |
| Age 25 to 27 at separation | 0.2238* (0.0141) | -0.0250* (0.0073) |
| Age greater than 27 at separation | 0.2898* (0.0224) | -0.1300* (0.0085) |
| High school graduate | 0.0944* (0.0151) | 0.1732* (0.0100) |
| Some college | 0.2775* (0.0270) | 0.1998* (0.0152) |
| B.A. or better | 0.4258* (0.0416) | 0.1766* (0.0218) |
| Black or African American | -0.1500* (0.0155) | -0.0518* (0.0067) |

Table B.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| Hispanic | −0.0243 (0.0129) | 0.0131 (0.0080) |
| Afghanistan or Iraq tour (2001–2004) | −0.1321* (0.0242) | −0.0554* (0.0277) |
| Disability retirement from military | −0.1241* (0.0316) | −0.4689* (0.0175) |
| Disability severance from military | −0.1293* (0.0130) | −0.1515* (0.0077) |
| AFQT category 1 or 2 | 0.1230* (0.0142) | −0.0111 (0.0064) |
| AFQT category 3a | 0.0402* (0.0112) | 0.0040 (0.0064) |
| Top quartile promotion (E5 or better) | 0.3128* (0.0200) | −0.0001 (0.0114) |
| Navy veteran | 0.0579* (0.0106) | 0.0233* (0.0078) |
| Marine Corps veteran | 0.0764* (0.0163) | 0.0373* (0.0091) |
| Air Force veteran | 0.2042* (0.0280) | 0.0663* (0.0085) |
| Constant | 9.6305* (0.0627) | 1.6425* (0.0654) |
| R-squared | 0.9185 | 0.0457 |
| N | 954,002 | 1,093,173 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table B.2
Regression Results for Enlisted Women

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------|----------------------|----------------------|
| 10–20% disability rating | −0.0431 (0.0245) | −0.0516* (0.0220) |
| 30–40% disability rating | −0.1192* (0.0402) | −0.2960* (0.0541) |
| 50–60% disability rating | −0.1959* (0.0788) | −0.5361* (0.0781) |
| 70–100% disability rating | −0.1473 (0.1574) | −1.1330* (0.0959) |
| FY1994 separation cohort | 0.0179 (0.0222) | 0.0034 (0.0139) |

Table B.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------|---------------------|----------------------|
| FY1995 separation cohort | 0.0589* (0.0236) | –0.0205 (0.0142) |
| FY1996 separation cohort | 0.0724* (0.0222) | –0.0410* (0.0157) |
| FY1997 separation cohort | 0.1195* (0.0223) | –0.0387* (0.0130) |
| FY1998 separation cohort | 0.1308* (0.0265) | –0.0798* (0.0171) |
| FY1999 separation cohort | 0.1580* (0.0269) | –0.0813* (0.0161) |
| FY2000 separation cohort | 0.1613* (0.0311) | –0.0916* (0.0174) |
| FY2001 separation cohort | 0.1408* (0.0292) | –0.1878* (0.0219) |
| FY2002 separation cohort | 0.0187 (0.0298) | –0.2945* (0.0306) |
| FY2003 separation cohort | 0.0350 (0.0330) | –0.2970* (0.0287) |
| FY2004 separation cohort | 0.0117 (0.0383) | –0.3067* (0.0367) |
| 2 years of civilian experience | 0.1600* (0.0082) | –0.0240* (0.0075) |
| 3 years of civilian experience | 0.2691* (0.0113) | –0.0615* (0.0115) |
| 4 years of civilian experience | 0.3623* (0.0151) | –0.0934* (0.0145) |
| 5 years of civilian experience | 0.4542* (0.0181) | –0.1232* (0.0186) |
| 6 years of civilian experience | 0.5288* (0.0208) | –0.1525* (0.0205) |
| 7 years of civilian experience | 0.5838* (0.0232) | –0.1709* (0.0230) |
| 8 years of civilian experience | 0.6301* (0.0240) | –0.2008* (0.0227) |
| 9 years of civilian experience | 0.6747* (0.0224) | –0.2266* (0.0208) |
| 10 years of civilian experience | 0.7259* (0.0209) | –0.2330* (0.0220) |
| 11 years of civilian experience | 0.7676* (0.0219) | –0.2339* (0.0254) |
| 12 years of civilian experience | 0.8051* (0.0279) | –0.2505* (0.0309) |

Table B.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| Age 24 to 27 at separation | 0.1708* (0.0128) | -0.0258* (0.0100) |
| Age greater than 27 at separation | 0.3200* (0.0216) | -0.0103 (0.0121) |
| Some college | 0.1629* (0.0193) | -0.0410* (0.0187) |
| B.A. or better | 0.4952* (0.0607) | 0.1196* (0.0199) |
| Black or African American | 0.0739* (0.0202) | 0.2499* (0.0128) |
| Hispanic | 0.0744* (0.0353) | 0.0148 (0.0124) |
| Afghanistan or Iraq tour (2001–4) | -0.0552 (0.0631) | 0.0755* (0.0330) |
| Disability retirement from military | -0.1845* (0.0900) | -0.4266* (0.0250) |
| Disability severance from military | -0.1916* (0.0257) | -0.1572* (0.0131) |
| AFQT category 1 or 2 | 0.1321* (0.0243) | -0.0798* (0.0213) |
| AFQT category 3a | 0.0408* (0.0171) | -0.0342* (0.0145) |
| Top quartile promotion (E5 or better) | 0.3464* (0.0392) | 0.0021 (0.0172) |
| Navy veteran | -0.0729* (0.0112) | -0.1011* (0.0136) |
| Marine Corps veteran | 0.0299 (0.0265) | -0.0466* (0.0184) |
| Air Force veteran | 0.0700* (0.0239) | -0.1090* (0.0163) |
| Constant | 9.2371* (0.0617) | 1.2921* (0.0467) |
| R-squared | 0.9165 | 0.0457 |
| N | 134,658 | 174,626 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, no college, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table B.3
Regression Results for Enlisted Nondisability Retirees

| Characteristic | In Earnings | Earnings > 0 |
|--------------------------------|----------------------|----------------------|
| 10% disability rating | 0.0269* (0.0082) | 0.0909* (0.0137) |
| 20% disability rating | -0.0103 (0.0089) | 0.0107 (0.0125) |
| 30% disability rating | -0.0240* (0.0099) | -0.0305* (0.0112) |
| 40% disability rating | -0.0363* (0.0120) | -0.0942* (0.0166) |
| 50% disability rating | -0.0649* (0.0315) | -0.1861* (0.0193) |
| 60–70% disability rating | -0.1053* (0.0455) | -0.3725* (0.0250) |
| 80–100% disability rating | -0.1428 (0.1038) | -0.8411* (0.0293) |
| FY1994 separation cohort | 0.0439* (0.0114) | 0.0357* (0.0120) |
| FY1995 separation cohort | 0.1082* (0.0119) | 0.0606* (0.0127) |
| FY1996 separation cohort | 0.1867* (0.0129) | 0.0950* (0.0117) |
| FY1997 separation cohort | 0.2586* (0.0119) | 0.1226* (0.0120) |
| FY1998 separation cohort | 0.2967* (0.0146) | 0.1386* (0.0146) |
| FY1999 separation cohort | 0.3575* (0.0185) | 0.1553* (0.0166) |
| FY2000 separation cohort | 0.4122* (0.0184) | 0.1452* (0.0187) |
| FY2001 separation cohort | 0.4672* (0.0184) | 0.1664* (0.0198) |
| FY2002 separation cohort | 0.4630* (0.0150) | 0.1282* (0.0213) |
| FY2003 separation cohort | 0.5018* (0.0185) | 0.1407* (0.0193) |
| FY2004 separation cohort | 0.5679* (0.0211) | 0.1249* (0.0292) |
| 2 years of civilian experience | 0.1367* (0.0044) | 0.0222* (0.0042) |
| 3 years of civilian experience | 0.2233* (0.0106) | 0.0319* (0.0069) |
| 4 years of civilian experience | 0.2831* (0.0095) | 0.0301* (0.0091) |

Table B.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| 5 years of civilian experience | 0.3348* (0.0114) | 0.0076 (0.0116) |
| 6 years of civilian experience | 0.3715* (0.0147) | -0.0228 (0.0133) |
| 7 years of civilian experience | 0.4055* (0.0127) | -0.0639* (0.0137) |
| 8 years of civilian experience | 0.4315* (0.0128) | -0.1132* (0.0136) |
| 9 years of civilian experience | 0.4540* (0.0132) | -0.1643* (0.0127) |
| 10 years of civilian experience | 0.4786* (0.0103) | -0.2102* (0.0143) |
| 11 years of civilian experience | 0.4943* (0.0108) | -0.2500* (0.0161) |
| 12 years of civilian experience | 0.5106* (0.0116) | -0.3066* (0.0197) |
| Age 40 to 42 at separation | -0.0213* (0.0056) | -0.0561* (0.0078) |
| Age 43 to 45 at separation | -0.0404* (0.0070) | -0.1389* (0.0091) |
| Age greater than 45 at separation | -0.0761* (0.0113) | -0.3129* (0.0125) |
| High school graduate | 0.0082 (0.0206) | 0.0610* (0.0126) |
| Some college | 0.0767* (0.0231) | 0.0976* (0.0165) |
| B.A. or better | 0.2421* (0.0216) | 0.1839* (0.0243) |
| Black or African American | -0.0591* (0.0106) | 0.0523* (0.0103) |
| Hispanic | 0.0825 (0.0523) | 0.0381* (0.0158) |
| Afghanistan or Iraq tour (2001–4) | -0.0515* (0.0211) | -0.0106 (0.0300) |
| Female | -0.3539* (0.0170) | -0.2962* (0.0113) |
| AFQT category 1 or 2 | 0.0820* (0.0088) | -0.0488* (0.0083) |
| AFQT category 3a | 0.0496* (0.0120) | -0.0134 (0.0099) |
| Top quartile promotion (E5 or better) | 0.1017* (0.0076) | -0.0261* (0.0094) |

Table B.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|----------------------|---------------------|---------------------|
| Navy veteran | 0.0224 (0.0116) | −0.0092 (0.0095) |
| Marine Corps veteran | 0.0785* (0.0185) | 0.0131 (0.0132) |
| Air Force veteran | 0.0819* (0.0144) | 0.0396* (0.0112) |
| Constant | 9.8626* (0.0321) | 1.1714* (0.0433) |
| R-squared | 0.8824 | 0.0304 |
| N | 249,485 | 355,944 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, female, AFQT category 3b or 4, not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

**Table B.4
Regression Results for All Officers**

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| 10–20% disability rating | −0.0918* (0.0276) | −0.0244 (0.0372) | −0.1047* (0.0273) | −0.0252 (0.0350) |
| 30–40% disability rating | −0.1378* (0.0291) | −0.1255* (0.0475) | −0.1303* (0.0432) | −0.1320* (0.0646) |
| 50–60% disability rating | −0.1737* (0.0390) | −0.3116* (0.0575) | −0.1930* (0.0704) | −0.3446* (0.1107) |
| 70–100% disability rating | −0.2829* (0.0741) | −0.8729* (0.0883) | −0.2336 (0.1431) | −0.9450* (0.0997) |
| FY1994 separation cohort | 0.0750* (0.0316) | 0.0273 (0.0386) | 0.0821 (0.0438) | −0.0159 (0.0411) |
| FY1995 separation cohort | 0.1685* (0.0427) | 0.0801 (0.0514) | 0.1541* (0.0379) | 0.0248 (0.0528) |
| FY1996 separation cohort | 0.2942* (0.0366) | 0.1057* (0.0417) | 0.2486* (0.0360) | 0.0482 (0.0487) |
| FY1997 separation cohort | 0.3689* (0.0356) | 0.1596* (0.0444) | 0.3052* (0.0363) | 0.0848 (0.0510) |
| FY1998 separation cohort | 0.4147* (0.0518) | 0.1913* (0.0532) | 0.3385* (0.0368) | 0.1164 (0.0633) |
| FY1999 separation cohort | 0.4625* (0.0441) | 0.2268* (0.0446) | 0.3637* (0.0377) | 0.1453* (0.0643) |
| FY2000 separation cohort | 0.5141* (0.0526) | 0.2556* (0.0466) | 0.3863* (0.0436) | 0.1753* (0.0636) |

Table B.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------------|------------------------|--------------|-------------|--------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| FY2001 separation cohort | 0.5621* | 0.2778* | 0.4016* | 0.1792* |
| | (0.0635) | (0.0503) | (0.0635) | (0.0838) |
| FY2002 separation cohort | 0.6197* | 0.2495* | 0.3913* | 0.0810 |
| | (0.0747) | (0.0809) | (0.0790) | (0.0983) |
| FY2003 separation cohort | 0.6404* | 0.2830* | 0.3863* | 0.0622 |
| | (0.0814) | (0.0753) | (0.0931) | (0.1186) |
| FY2004 separation cohort | 0.6754* | 0.2403* | 0.3757* | 0.0292 |
| | (0.0955) | (0.0775) | (0.0995) | (0.1139) |
| 2 years of civilian experience | 0.1376* | 0.0632* | 0.1574* | 0.0507* |
| | (0.0153) | (0.0107) | (0.0129) | (0.0115) |
| 3 years of civilian experience | 0.2380* | 0.0807* | 0.2761* | 0.0432 |
| | (0.0280) | (0.0201) | (0.0231) | (0.0242) |
| 4 years of civilian experience | 0.3116* | 0.0778* | 0.3629* | 0.0265 |
| | (0.0390) | (0.0244) | (0.0309) | (0.0303) |
| 5 years of civilian experience | 0.3783* | 0.0655* | 0.4342* | 0.0042 |
| | (0.0459) | (0.0298) | (0.0382) | (0.0366) |
| 6 years of civilian experience | 0.4265* | 0.0493 | 0.4928* | −0.0169 |
| | (0.0518) | (0.0332) | (0.0428) | (0.0407) |
| 7 years of civilian experience | 0.4666* | 0.0277 | 0.5482* | −0.0398 |
| | (0.0573) | (0.0355) | (0.0482) | (0.0434) |
| 8 years of civilian experience | 0.4999* | 0.0002 | 0.5831* | −0.0584 |
| | (0.0568) | (0.0350) | (0.0513) | (0.0427) |
| 9 years of civilian experience | 0.5261* | −0.0260 | 0.6167* | −0.0830* |
| | (0.0598) | (0.0292) | (0.0502) | (0.0372) |
| 10 years of civilian experience | 0.5630* | −0.0514 | 0.6665* | −0.1080* |
| | (0.0634) | (0.0279) | (0.0524) | (0.0361) |
| 11 years of civilian experience | 0.5829* | −0.0736* | 0.7004* | −0.1277* |
| | (0.0680) | (0.0292) | (0.0552) | (0.0364) |
| 12 years of civilian experience | 0.6040* | −0.1118* | 0.7136* | −0.1501* |
| | (0.0706) | (0.0338) | (0.0634) | (0.0350) |
| Age 31 to 36 at separation | | | 0.1418* | 0.0392 |
| | | | (0.0440) | (0.0274) |
| Age 37 to 43 at separation | | | 0.0327 | −0.1172* |
| | | | (0.0994) | (0.0401) |
| Age > 43 at separation | −0.0221 | −0.1736* | −0.0465 | −0.2399* |
| | (0.0141) | (0.0170) | (0.0952) | (0.0979) |
| Master's degree | 0.1586* | −0.0199 | 0.1270* | −0.0693 |
| | (0.0407) | (0.0523) | (0.0275) | (0.0459) |
| Professional degree | 0.6671* | −0.1884* | 0.6696* | −0.2448* |
| | (0.0692) | (0.0484) | (0.0370) | (0.0325) |
| Black or African American | −0.1114* | 0.0562 | −0.1292* | 0.1228* |
| | (0.0291) | (0.0288) | (0.0328) | (0.0418) |

Table B.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| Afghanistan or Iraq tour (2001–4) | 0.0315 (0.0991) | 0.0316 (0.0686) | –0.0729 (0.0731) | 0.0277 (0.0553) |
| Female veteran | –0.5214* (0.0351) | –0.4726* (0.0491) | –0.5312* (0.0317) | –0.5216* (0.0503) |
| Top quartile promotion (O4 or better) | 0.4353* (0.1118) | –0.0961* (0.0423) | 0.7164* (0.1585) | –0.1352* (0.0492) |
| Navy veteran | 0.0607 (0.0313) | –0.0069 (0.0278) | 0.0977* (0.0219) | 0.0015 (0.0257) |
| Marine Corps veteran | –0.0427 (0.0530) | 0.0538 (0.0456) | 0.0129 (0.0377) | 0.0641 (0.0448) |
| Air Force veteran | –0.0121 (0.0351) | –0.0498* (0.0245) | 0.0333 (0.0204) | –0.0525 (0.0272) |
| Disability retirement from military | | | –0.2682* (0.0697) | –0.7053* (0.0485) |
| Disability severance from military | | | –0.1385* (0.0526) | –0.2744* (0.0386) |
| Constant | 10.3889* (0.0635) | 1.1279* (0.0714) | 10.4268* (0.0687) | 1.2967* (0.1009) |
| R-squared | 0.9088 | 0.0187 | 0.8963 | 0.0332 |
| N | 69,062 | 88,792 | 101,881 | 117,346 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age 43 or less at separation for nondisability retirees (age < 31 for other officers), less than a master's degree, not black or African American, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation (only for other officers), not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Examination of How SCD Affects Transition to Civilian Employment

Table C.1
Regression Results for Enlisted Men with Interactions Between Rating and Low Experience

| Characteristic | In Earnings | Earnings > 0 |
|----------------------------|----------------------|----------------------|
| 10% rating & < 3 years | 0.0239 (0.0242) | 0.0468* (0.0167) |
| 20% rating & < 3 years | 0.0284 (0.0228) | 0.0455* (0.0171) |
| 30% rating & < 3 years | 0.0420 (0.0228) | 0.0744* (0.0197) |
| 40% rating & < 3 years | 0.0463* (0.0230) | 0.0704* (0.0196) |
| 50% rating & < 3 years | 0.0043 (0.0346) | 0.0376 (0.0416) |
| 60–70% rating & < 3 years | 0.0211 (0.0712) | 0.1526* (0.0236) |
| 80–100% rating & < 3 years | –0.1317 (0.1147) | 0.0319 (0.0264) |
| 10% disability rating | –0.0471* (0.0169) | –0.0741* (0.0197) |
| 20% disability rating | –0.0785* (0.0210) | –0.1576* (0.0252) |
| 30% disability rating | –0.1410* (0.0295) | –0.3305* (0.0691) |
| 40% disability rating | –0.1369* (0.0348) | –0.3925* (0.0681) |
| 50% disability rating | –0.2126* (0.0477) | –0.5919* (0.1191) |
| 60–70% disability rating | –0.2517* (0.0612) | –0.9156* (0.0937) |
| 80–100% disability rating | –0.3559* (0.1269) | –1.6015* (0.1260) |

Table C.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------|---------------------|----------------------|
| FY1994 separation cohort | 0.0312* (0.0138) | −0.0052 (0.0069) |
| FY1995 separation cohort | 0.0772* (0.0146) | 0.0020 (0.0092) |
| FY1996 separation cohort | 0.1166* (0.0143) | 0.0081 (0.0080) |
| FY1997 separation cohort | 0.1498* (0.0138) | 0.0003 (0.0083) |
| FY1998 separation cohort | 0.1697* (0.0177) | −0.0081 (0.0092) |
| FY1999 separation cohort | 0.1668* (0.0189) | −0.0215* (0.0107) |
| FY2000 separation cohort | 0.1333* (0.0226) | −0.0671* (0.0125) |
| FY2001 separation cohort | 0.1252* (0.0232) | −0.1160* (0.0166) |
| FY2002 separation cohort | 0.0042 (0.0240) | −0.2232* (0.0205) |
| FY2003 separation cohort | −0.0149 (0.0265) | −0.2885* (0.0248) |
| FY2004 separation cohort | −0.0078 (0.0333) | −0.2885* (0.0296) |
| 2 years of civilian experience | 0.1635* (0.0066) | −0.0311* (0.0048) |
| 3 years of civilian experience | 0.2766* (0.0127) | −0.0669* (0.0099) |
| 4 years of civilian experience | 0.3688* (0.0179) | −0.1046* (0.0124) |
| 5 years of civilian experience | 0.4510* (0.0228) | −0.1510* (0.0141) |
| 6 years of civilian experience | 0.5131* (0.0260) | −0.1987* (0.0165) |
| 7 years of civilian experience | 0.5590* (0.0275) | −0.2495* (0.0175) |
| 8 years of civilian experience | 0.5906* (0.0268) | −0.3035* (0.0168) |
| 9 years of civilian experience | 0.6232* (0.0250) | −0.3593* (0.0159) |
| 10 years of civilian experience | 0.6594* (0.0253) | −0.3968* (0.0159) |
| 11 years of civilian experience | 0.7090* (0.0266) | −0.4333* (0.0174) |

Table C.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| 12 years of civilian experience | 0.7401* (0.0288) | -0.4687* (0.0199) |
| Age 23 or 24 at separation | 0.1114* (0.0137) | -0.0213* (0.0077) |
| Age 25 to 27 at separation | 0.2238* (0.0141) | -0.0249* (0.0071) |
| Age greater than 27 at separation | 0.2899* (0.0224) | -0.1299* (0.0085) |
| High school graduate | 0.0946* (0.0147) | 0.1731* (0.0101) |
| Some college | 0.2775* (0.0271) | 0.1997* (0.0153) |
| B.A. or better | 0.4246* (0.0407) | 0.1765* (0.0219) |
| Black or African American | -0.1499* (0.0155) | -0.0517* (0.0068) |
| Hispanic | -0.0243* (0.0122) | 0.0131 (0.0078) |
| Afghanistan or Iraq tour (2001-4) | -0.1311* (0.0225) | -0.0493* (0.0232) |
| Disability retirement from military | -0.1215* (0.0306) | -0.4677* (0.0172) |
| Disability severance from military | -0.1297* (0.0125) | -0.1515* (0.0077) |
| AFQT category 1 or 2 | 0.1231* (0.0141) | -0.0112 (0.0063) |
| AFQT category 3a | 0.0402* (0.0111) | 0.0038 (0.0064) |
| Top quartile promotion (E5 or better) | 0.3124* (0.0196) | 0.0001 (0.0114) |
| Navy veteran | 0.0579* (0.0106) | 0.0234* (0.0076) |
| Marine Corps veteran | 0.0764* (0.0162) | 0.0374* (0.0091) |
| Air Force veteran | 0.2045* (0.0277) | 0.0665* (0.0084) |
| Constant | 9.6280* (0.0632) | 1.6325* (0.0658) |
| R-squared | 0.9192 | 0.0458 |
| N | 954,002 | 1,093,173 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table C.2
Regression Results for Enlisted Women with Interactions Between
Rating and Low Experience

| Characteristic | In Earnings | Earnings > 0 |
|--------------------------------|----------------------|----------------------|
| 10–20% rating & < 3 years | 0.0055 (0.0231) | 0.0553* (0.0226) |
| 30–40% rating & < 3 years | 0.0011 (0.0266) | 0.0754* (0.0226) |
| 50–60% rating & < 3 years | –0.0505 (0.0654) | 0.0929* (0.0324) |
| 70–100% rating & < 3 years | –0.1124 (0.1833) | 0.1842* (0.0334) |
| 10–20% disability rating | –0.0447 (0.0270) | –0.0666* (0.0237) |
| 30–40% disability rating | –0.1197* (0.0429) | –0.3181* (0.0557) |
| 50–60% disability rating | –0.1842* (0.0802) | –0.5630* (0.0816) |
| 70–100% disability rating | –0.1194 (0.1720) | –1.1913* (0.0972) |
| FY1994 separation cohort | 0.0185 (0.0211) | 0.0035 (0.0133) |
| FY1995 separation cohort | 0.0594* (0.0225) | –0.0201 (0.0141) |
| FY1996 separation cohort | 0.0730* (0.0210) | –0.0406* (0.0151) |
| FY1997 separation cohort | 0.1202* (0.0213) | –0.0383* (0.0131) |
| FY1998 separation cohort | 0.1314* (0.0250) | –0.0796* (0.0171) |
| FY1999 separation cohort | 0.1585* (0.0257) | –0.0813* (0.0159) |
| FY2000 separation cohort | 0.1619* (0.0298) | –0.0921* (0.0172) |
| FY2001 separation cohort | 0.1417* (0.0282) | –0.1885* (0.0214) |
| FY2002 separation cohort | 0.0198 (0.0287) | –0.2971* (0.0268) |
| FY2003 separation cohort | 0.0361 (0.0314) | –0.3015* (0.0234) |
| FY2004 separation cohort | 0.0132 (0.0370) | –0.3110* (0.0306) |
| 2 years of civilian experience | 0.1604* (0.0068) | –0.0239* (0.0074) |

Table C.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|-------------------------------------|----------------------|----------------------|
| 3 years of civilian experience | 0.2677* (0.0133) | -0.0358* (0.0158) |
| 4 years of civilian experience | 0.3609* (0.0172) | -0.0682* (0.0189) |
| 5 years of civilian experience | 0.4529* (0.0206) | -0.0983* (0.0229) |
| 6 years of civilian experience | 0.5274* (0.0233) | -0.1279* (0.0247) |
| 7 years of civilian experience | 0.5826* (0.0250) | -0.1466* (0.0269) |
| 8 years of civilian experience | 0.6287* (0.0262) | -0.1767* (0.0263) |
| 9 years of civilian experience | 0.6736* (0.0232) | -0.2028* (0.0239) |
| 10 years of civilian experience | 0.7245* (0.0223) | -0.2094* (0.0245) |
| 11 years of civilian experience | 0.7664* (0.0236) | -0.2104* (0.0274) |
| 12 years of civilian experience | 0.8046* (0.0296) | -0.2271* (0.0325) |
| Age 24 to 27 at separation | 0.1707* (0.0128) | -0.0258* (0.0099) |
| Age greater than 27 at separation | 0.3202* (0.0215) | -0.0102 (0.0118) |
| Some college | 0.1619* (0.0180) | -0.0411* (0.0186) |
| B.A. or better | 0.4925* (0.0584) | 0.1196* (0.0199) |
| Black or African American | 0.0739* (0.0200) | 0.2500* (0.0124) |
| Hispanic | 0.0743* (0.0346) | 0.0149 (0.0122) |
| Afghanistan or Iraq tour (2001–4) | -0.0589 (0.0559) | 0.0848* (0.0267) |
| Disability retirement from military | -0.1806* (0.0873) | -0.4236* (0.0248) |
| Disability severance from military | -0.1938* (0.0242) | -0.1572* (0.0130) |
| AFQT category 1 or 2 | 0.1322* (0.0243) | -0.0802* (0.0210) |

Table C.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| AFQT category 3a | 0.0409* (0.0170) | -0.0346* (0.0141) |
| Top quartile promotion (E5 or better) | 0.3446* (0.0397) | 0.0025 (0.0171) |
| Navy veteran | -0.0732* (0.0112) | -0.1009* (0.0133) |
| Marine Corps veteran | 0.0307 (0.0260) | -0.0465* (0.0182) |
| Air Force veteran | 0.0696* (0.0242) | -0.1086* (0.0161) |
| Constant | 9.2378* (0.0610) | 1.2740* (0.0484) |
| R-squared | 0.8717 | 0.0335 |
| N | 134,658 | 174,626 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, no college, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table C.3
Regression Results for Enlisted Nondisability Retirees with Interactions
Between Rating and Low Experience

| Characteristic | In Earnings | Earnings > 0 |
|----------------------------|---------------------|----------------------|
| 10% rating & < 3 years | -0.0158 (0.0156) | -0.0129 (0.0233) |
| 20% rating & < 3 years | 0.0031 (0.0140) | -0.0083 (0.0167) |
| 30% rating & < 3 years | -0.0083 (0.0144) | 0.0369* (0.0178) |
| 40% rating & < 3 years | 0.0016 (0.0146) | 0.0446* (0.0177) |
| 50% rating & < 3 years | 0.0021 (0.0386) | 0.0805* (0.0205) |
| 60–70% rating & < 3 years | -0.0233 (0.0578) | 0.1531* (0.0204) |
| 80–100% rating & < 3 years | -0.0564 (0.1206) | 0.3330* (0.0274) |
| 10% disability rating | 0.0313* (0.0104) | 0.0958* (0.0171) |
| 20% disability rating | -0.0115 (0.0102) | 0.0152 (0.0138) |
| 30% disability rating | -0.0216 (0.0111) | -0.0399* (0.0120) |

Table C.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|--------------------------------|-------------|--------------|
| 40% disability rating | -0.0370* | -0.1062* |
| | (0.0133) | (0.0175) |
| 50% disability rating | -0.0645 | -0.2106* |
| | (0.0371) | (0.0213) |
| 60–70% disability rating | -0.1019 | -0.4227* |
| | (0.0571) | (0.0268) |
| 80–100% disability rating | -0.1296 | -0.9496* |
| | (0.1207) | (0.0313) |
| FY1994 separation cohort | 0.0440* | 0.0359* |
| | (0.0110) | (0.0119) |
| FY1995 separation cohort | 0.1085* | 0.0609* |
| | (0.0116) | (0.0124) |
| FY1996 separation cohort | 0.1872* | 0.0952* |
| | (0.0123) | (0.0116) |
| FY1997 separation cohort | 0.2590* | 0.1231* |
| | (0.0117) | (0.0118) |
| FY1998 separation cohort | 0.2970* | 0.1391* |
| | (0.0143) | (0.0145) |
| FY1999 separation cohort | 0.3568* | 0.1554* |
| | (0.0174) | (0.0165) |
| FY2000 separation cohort | 0.4128* | 0.1441* |
| | (0.0180) | (0.0183) |
| FY2001 separation cohort | 0.4676* | 0.1636* |
| | (0.0177) | (0.0189) |
| FY2002 separation cohort | 0.4642* | 0.1210* |
| | (0.0138) | (0.0188) |
| FY2003 separation cohort | 0.5035* | 0.1248* |
| | (0.0173) | (0.0138) |
| FY2004 separation cohort | 0.5701* | 0.1045* |
| | (0.0196) | (0.0214) |
| 2 years of civilian experience | 0.1367* | 0.0219* |
| | (0.0043) | (0.0042) |
| 3 years of civilian experience | 0.2201* | 0.0495* |
| | (0.0111) | (0.0088) |
| 4 years of civilian experience | 0.2807* | 0.0469* |
| | (0.0120) | (0.0109) |
| 5 years of civilian experience | 0.3324* | 0.0237 |
| | (0.0140) | (0.0135) |
| 6 years of civilian experience | 0.3694* | -0.0072 |
| | (0.0161) | (0.0151) |
| 7 years of civilian experience | 0.4031* | -0.0488* |
| | (0.0147) | (0.0154) |

Table C.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| 8 years of civilian experience | 0.4288* (0.0143) | -0.0984* (0.0151) |
| 9 years of civilian experience | 0.4518* (0.0140) | -0.1498* (0.0139) |
| 10 years of civilian experience | 0.4763* (0.0116) | -0.1958* (0.0152) |
| 11 years of civilian experience | 0.4920* (0.0120) | -0.2358* (0.0168) |
| 12 years of civilian experience | 0.5084* (0.0124) | -0.2925* (0.0203) |
| Age 40 to 42 at separation | -0.0213* (0.0055) | -0.0561* (0.0076) |
| Age 43 to 45 at separation | -0.0407* (0.0071) | -0.1390* (0.0090) |
| Age greater than 45 at separation | -0.0766* (0.0113) | -0.3131* (0.0125) |
| High school graduate | 0.0092 (0.0191) | 0.0612* (0.0125) |
| Some college | 0.0777* (0.0216) | 0.0975* (0.0164) |
| B.A. or better | 0.2432* (0.0203) | 0.1836* (0.0243) |
| Black or African American | -0.0589* (0.0103) | 0.0523* (0.0103) |
| Hispanic | 0.0752 (0.0430) | 0.0378* (0.0157) |
| Afghanistan or Iraq tour (2001–4) | -0.0514* (0.0210) | -0.0037 (0.0235) |
| Female | -0.3545* (0.0165) | -0.2962* (0.0112) |
| AFQT category 1 or 2 | 0.0819* (0.0082) | -0.0487* (0.0082) |
| AFQT category 3a | 0.0477* (0.0098) | -0.0133 (0.0097) |
| Top quartile promotion (E5 or better) | 0.1016* (0.0076) | -0.0263* (0.0092) |
| Navy veteran | 0.0226* (0.0113) | -0.0091 (0.0094) |
| Marine Corps veteran | 0.0797* (0.0166) | 0.0127 (0.0132) |
| Air Force veteran | 0.0819* (0.0143) | 0.0398* (0.0110) |

Table C.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|----------------|-------------|--------------|
| Constant | 9.8641* | 1.1598* |
| R-squared | 0.8841 | 0.0181 |
| N | 249,485 | 355,944 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, female, AFQT category 3b or 4, not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table C.4
Results for All Officers with Interactions Between Rating and Low Experience

| Characteristic | Nondisability Retirees | | Others | |
|----------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| 10–20% rating & < 3 years | 0.0332 (0.0422) | –0.0044 (0.0334) | 0.0571 (0.0394) | –0.0249 (0.0357) |
| 30–40% rating & < 3 years | 0.0725 (0.0447) | 0.0062 (0.0323) | 0.1125* (0.0479) | 0.0063 (0.0366) |
| 50–60% rating & < 3 years | 0.0997 (0.0543) | 0.1200* (0.0427) | 0.1520* (0.0632) | 0.0848 (0.0543) |
| 70–100% rating & < 3 years | 0.1065 (0.1111) | 0.2212* (0.0601) | 0.0995 (0.1322) | 0.1573* (0.0534) |
| 10–20% disability rating | –0.1001* (0.0314) | –0.0225 (0.0384) | –0.1211* (0.0292) | –0.0176 (0.0388) |
| 30–40% disability rating | –0.1579* (0.0343) | –0.1261* (0.0479) | –0.1649* (0.0407) | –0.1338* (0.0649) |
| 50–60% disability rating | –0.2081* (0.0485) | –0.3507* (0.0600) | –0.2350* (0.0733) | –0.3681* (0.1178) |
| 70–100% disability rating | –0.3182* (0.0833) | –0.9514* (0.0887) | –0.2659 (0.1541) | –0.9895* (0.1022) |
| FY1994 separation cohort | 0.0745* (0.0308) | 0.0270 (0.0382) | 0.0822 (0.0429) | –0.0156 (0.0410) |
| FY1995 separation cohort | 0.1685* (0.0412) | 0.0804 (0.0509) | 0.1544* (0.0364) | 0.0255 (0.0525) |
| FY1996 separation cohort | 0.2937* (0.0354) | 0.1061* (0.0409) | 0.2497* (0.0347) | 0.0484 (0.0485) |
| FY1997 separation cohort | 0.3694* (0.0346) | 0.1598* (0.0439) | 0.3056* (0.0356) | 0.0848 (0.0511) |
| FY1998 separation cohort | 0.4144* (0.0504) | 0.1922* (0.0521) | 0.3392* (0.0357) | 0.1162 (0.0631) |
| FY1999 separation cohort | 0.4605* (0.0434) | 0.2266* (0.0444) | 0.3641* (0.0365) | 0.1452* (0.0643) |
| FY2000 separation cohort | 0.5118* (0.0525) | 0.2544* (0.0465) | 0.3870* (0.0420) | 0.1746* (0.0629) |

Table C.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------------|------------------------|--------------|-------------|--------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| FY2001 separation cohort | 0.5579* | 0.2736* | 0.4009* | 0.1766* |
| | (0.0620) | (0.0491) | (0.0610) | (0.0821) |
| FY2002 separation cohort | 0.6100* | 0.2408* | 0.3889* | 0.0790 |
| | (0.0741) | (0.0752) | (0.0746) | (0.0961) |
| FY2003 separation cohort | 0.6196* | 0.2637* | 0.3796* | 0.0593 |
| | (0.0862) | (0.0688) | (0.0877) | (0.1163) |
| FY2004 separation cohort | 0.6555* | 0.2232* | 0.3682* | 0.0256 |
| | (0.0967) | (0.0735) | (0.0927) | (0.1102) |
| 2 years of civilian experience | 0.1379* | 0.0630* | 0.1576* | 0.0505* |
| | (0.0153) | (0.0107) | (0.0112) | (0.0115) |
| 3 years of civilian experience | 0.2516* | 0.0907* | 0.2880* | 0.0477 |
| | (0.0347) | (0.0247) | (0.0231) | (0.0272) |
| 4 years of civilian experience | 0.3247* | 0.0873* | 0.3745* | 0.0308 |
| | (0.0454) | (0.0287) | (0.0314) | (0.0331) |
| 5 years of civilian experience | 0.3910* | 0.0743* | 0.4457* | 0.0086 |
| | (0.0523) | (0.0341) | (0.0390) | (0.0393) |
| 6 years of civilian experience | 0.4391* | 0.0577 | 0.5043* | −0.0126 |
| | (0.0582) | (0.0373) | (0.0435) | (0.0433) |
| 7 years of civilian experience | 0.4791* | 0.0358 | 0.5605* | −0.0355 |
| | (0.0631) | (0.0395) | (0.0473) | (0.0459) |
| 8 years of civilian experience | 0.5120* | 0.0081 | 0.5956* | −0.0541 |
| | (0.0627) | (0.0389) | (0.0509) | (0.0452) |
| 9 years of civilian experience | 0.5382* | −0.0182 | 0.6294* | −0.0788* |
| | (0.0655) | (0.0330) | (0.0491) | (0.0396) |
| 10 years of civilian experience | 0.5752* | −0.0438 | 0.6782* | −0.1038* |
| | (0.0691) | (0.0319) | (0.0523) | (0.0384) |
| 11 years of civilian experience | 0.5951* | −0.0660* | 0.7122* | −0.1235* |
| | (0.0735) | (0.0330) | (0.0545) | (0.0386) |
| 12 years of civilian experience | 0.6166* | −0.1043* | 0.7252* | −0.1459* |
| | (0.0762) | (0.0371) | (0.0624) | (0.0370) |
| Age 31 to 36 at separation | | | 0.1422* | 0.0391 |
| | | | (0.0438) | (0.0274) |
| Age 37 to 43 at separation | | | 0.0331 | −0.1172* |
| | | | (0.0992) | (0.0401) |
| Age > 43 at separation | −0.0221 | −0.1737* | −0.0420 | −0.2405* |
| | (0.0141) | (0.0170) | (0.0895) | (0.0967) |
| Master's degree | 0.1585* | −0.0198 | 0.1272* | −0.0694 |
| | (0.0406) | (0.0523) | (0.0275) | (0.0459) |
| Professional degree | 0.6647* | −0.1886* | 0.6687* | −0.2447* |
| | (0.0684) | (0.0482) | (0.0379) | (0.0325) |

Table C.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------------------|------------------------|--------------|-------------|--------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| Black or African American | −0.1103* | 0.0568* | −0.1285* | 0.1222* |
| | (0.0299) | (0.0290) | (0.0322) | (0.0411) |
| Afghanistan or Iraq tour (2001–4) | 0.0200 | 0.0324 | −0.0701 | 0.0338 |
| | (0.0880) | (0.0622) | (0.0659) | (0.0487) |
| Female veteran | −0.5216* | −0.4725* | −0.5320* | −0.5218* |
| | (0.0352) | (0.0491) | (0.0307) | (0.0502) |
| Top quartile promotion (O4 or better) | 0.4364* | −0.0959* | 0.7119* | −0.1349* |
| | (0.1121) | (0.0419) | (0.1545) | (0.0493) |
| Navy veteran | 0.0609* | −0.0074 | 0.0974* | 0.0018 |
| | (0.0303) | (0.0278) | (0.0216) | (0.0256) |
| Marine Corps veteran | −0.0402 | 0.0548 | 0.0125 | 0.0641 |
| | (0.0536) | (0.0464) | (0.0374) | (0.0450) |
| Air Force veteran | −0.0124 | −0.0500* | 0.0330 | −0.0522 |
| | (0.0348) | (0.0247) | (0.0202) | (0.0272) |
| Disability retirement from military | | | −0.2617* | −0.7039* |
| | | | (0.0650) | (0.0484) |
| Disability severance from military | | | −0.1354* | −0.2750* |
| | | | (0.0556) | (0.0385) |
| Constant | 10.3804* | 1.1219* | 10.4179* | 1.2937* |
| | (0.0640) | (0.0726) | (0.0681) | (0.1014) |
| R-squared | 0.9121 | 0.0187 | 0.8997 | 0.0333 |
| N | 69,062 | 88,792 | 101,881 | 117,346 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age 43 or less at separation for nondisability retirees (age < 31 for other officers), less than a master's degree, not black or African American, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation (only for other officers), not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Examination of SCD Cohort Effects

Table D.1
Regression Results for Enlisted Men with Interactions Between Rating and Most Recent Year

| Characteristic | In Earnings | Earnings > 0 |
|----------------------------|----------------------|----------------------|
| 10% rating & year 2005 | -0.0160 (0.0134) | -0.0348* (0.0105) |
| 20% rating & year 2005 | -0.0104 (0.0136) | -0.0213 (0.0125) |
| 30% rating & year 2005 | -0.0011 (0.0161) | -0.0156 (0.0169) |
| 40% rating & year 2005 | -0.0068 (0.0178) | 0.0074 (0.0180) |
| 50% rating & year 2005 | 0.0449 (0.0290) | -0.0016 (0.0324) |
| 60–70% rating & year 2005 | 0.0271 (0.0480) | 0.0014 (0.0298) |
| 80–100% rating & year 2005 | 0.0520 (0.1430) | 0.0213 (0.0253) |
| 10% disability rating | -0.0388* (0.0152) | -0.0578* (0.0193) |
| 20% disability rating | -0.0693* (0.0207) | -0.1429* (0.0250) |
| 30% disability rating | -0.1289* (0.0297) | -0.3089* (0.0692) |
| 40% disability rating | -0.1220* (0.0345) | -0.3750* (0.0683) |
| 50% disability rating | -0.2172* (0.0476) | -0.5826* (0.1172) |
| 60–70% disability rating | -0.2494* (0.0646) | -0.8736* (0.0947) |
| 80–100% disability rating | -0.3817* (0.1305) | -1.5960* (0.1266) |
| FY1994 separation cohort | 0.0312* (0.0140) | -0.0049 (0.0073) |

Table D.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------|---------------------|----------------------|
| FY1995 separation cohort | 0.0773* (0.0146) | 0.0023 (0.0096) |
| FY1996 separation cohort | 0.1167* (0.0143) | 0.0086 (0.0082) |
| FY1997 separation cohort | 0.1499* (0.0138) | 0.0009 (0.0085) |
| FY1998 separation cohort | 0.1698* (0.0178) | -0.0072 (0.0093) |
| FY1999 separation cohort | 0.1671* (0.0190) | -0.0205 (0.0107) |
| FY2000 separation cohort | 0.1338* (0.0230) | -0.0656* (0.0128) |
| FY2001 separation cohort | 0.1263* (0.0231) | -0.1139* (0.0175) |
| FY2002 separation cohort | 0.0042 (0.0238) | -0.2193* (0.0224) |
| FY2003 separation cohort | -0.0128 (0.0282) | -0.2818* (0.0293) |
| FY2004 separation cohort | -0.0055 (0.0355) | -0.2792* (0.0353) |
| 2 years of civilian experience | 0.1635* (0.0066) | -0.0309* (0.0048) |
| 3 years of civilian experience | 0.2730* (0.0110) | -0.0801* (0.0080) |
| 4 years of civilian experience | 0.3655* (0.0162) | -0.1175* (0.0105) |
| 5 years of civilian experience | 0.4476* (0.0211) | -0.1635* (0.0124) |
| 6 years of civilian experience | 0.5100* (0.0243) | -0.2110* (0.0149) |
| 7 years of civilian experience | 0.5559* (0.0259) | -0.2616* (0.0161) |
| 8 years of civilian experience | 0.5879* (0.0253) | -0.3152* (0.0155) |
| 9 years of civilian experience | 0.6200* (0.0236) | -0.3707* (0.0147) |
| 10 years of civilian experience | 0.6567* (0.0240) | -0.4077* (0.0149) |
| 11 years of civilian experience | 0.7062* (0.0257) | -0.4435* (0.0165) |
| 12 years of civilian experience | 0.7377* (0.0282) | -0.4773* (0.0189) |
| Age 23 or 24 at separation | 0.1118* (0.0139) | -0.0214* (0.0080) |

Table D.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| Age 25 to 27 at separation | 0.2246* (0.0145) | -0.0250* (0.0073) |
| Age greater than 27 at separation | 0.2902* (0.0226) | -0.1300* (0.0085) |
| High school graduate | 0.0945* (0.0149) | 0.1732* (0.0100) |
| Some college | 0.2777* (0.0268) | 0.1998* (0.0152) |
| B.A. or better | 0.4262* (0.0420) | 0.1766* (0.0218) |
| Black or African American | -0.1501* (0.0156) | -0.0518* (0.0067) |
| Hispanic | -0.0242 (0.0128) | 0.0131 (0.0080) |
| Afghanistan or Iraq tour (2001–4) | -0.1324* (0.0238) | -0.0556 (0.0284) |
| Disability retirement from military | -0.1235* (0.0308) | -0.4699* (0.0175) |
| Disability severance from military | -0.1297* (0.0128) | -0.1517* (0.0077) |
| AFQT category 1 or 2 | 0.1230* (0.0141) | -0.0111 (0.0064) |
| AFQT category 3a | 0.0402* (0.0112) | 0.0040 (0.0064) |
| Top quartile promotion (E5 or better) | 0.3127* (0.0198) | -0.0000 (0.0115) |
| Navy veteran | 0.0578* (0.0106) | 0.0233* (0.0078) |
| Marine Corps veteran | 0.0764* (0.0163) | 0.0373* (0.0091) |
| Air Force veteran | 0.2042* (0.0281) | 0.0663* (0.0084) |
| Constant | 9.6301* (0.0627) | 1.6411* (0.0654) |
| R-squared | 0.9189 | 0.0457 |
| N | 954,002 | 1,093,173 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table D.2
Regression Results for Enlisted Women with Interactions Between Rating and
Most Recent Year

| Characteristic | In Earnings | Earnings > 0 |
|----------------------------|----------------------|----------------------|
| 10–20% rating & year 2005 | –0.0198 (0.0154) | –0.0172 (0.0167) |
| 30–40% rating & year 2005 | –0.0045 (0.0202) | 0.0258 (0.0180) |
| 50–60% rating & year 2005 | 0.0257 (0.0736) | 0.0253 (0.0271) |
| 70–100% rating & year 2005 | –0.0218 (0.1623) | –0.0096 (0.0349) |
| 10–20% disability rating | –0.0404 (0.0252) | –0.0487* (0.0221) |
| 30–40% disability rating | –0.1188* (0.0413) | –0.3006* (0.0549) |
| 50–60% disability rating | –0.2038* (0.0799) | –0.5404* (0.0804) |
| 70–100% disability rating | –0.1475 (0.1619) | –1.1314* (0.0971) |
| FY1994 separation cohort | 0.0181 (0.0220) | 0.0034 (0.0139) |
| FY1995 separation cohort | 0.0592* (0.0233) | –0.0205 (0.0142) |
| FY1996 separation cohort | 0.0729* (0.0220) | –0.0410* (0.0156) |
| FY1997 separation cohort | 0.1201* (0.0221) | –0.0388* (0.0130) |
| FY1998 separation cohort | 0.1307* (0.0255) | –0.0799* (0.0172) |
| FY1999 separation cohort | 0.1588* (0.0267) | –0.0815* (0.0162) |
| FY2000 separation cohort | 0.1621* (0.0309) | –0.0919* (0.0176) |
| FY2001 separation cohort | 0.1420* (0.0291) | –0.1882* (0.0221) |
| FY2002 separation cohort | 0.0201 (0.0299) | –0.2950* (0.0308) |
| FY2003 separation cohort | 0.0371 (0.0329) | –0.2979* (0.0294) |
| FY2004 separation cohort | 0.0156 (0.0396) | –0.3088* (0.0379) |

Table D.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|-------------------------------------|----------------------|----------------------|
| 2 years of civilian experience | 0.1602* (0.0082) | -0.0241* (0.0076) |
| 3 years of civilian experience | 0.2693* (0.0113) | -0.0617* (0.0117) |
| 4 years of civilian experience | 0.3627* (0.0152) | -0.0937* (0.0149) |
| 5 years of civilian experience | 0.4547* (0.0183) | -0.1235* (0.0191) |
| 6 years of civilian experience | 0.5295* (0.0211) | -0.1528* (0.0212) |
| 7 years of civilian experience | 0.5838* (0.0227) | -0.1713* (0.0238) |
| 8 years of civilian experience | 0.6308* (0.0244) | -0.2012* (0.0236) |
| 9 years of civilian experience | 0.6756* (0.0228) | -0.2271* (0.0217) |
| 10 years of civilian experience | 0.7269* (0.0215) | -0.2336* (0.0232) |
| 11 years of civilian experience | 0.7689* (0.0224) | -0.2345* (0.0268) |
| 12 years of civilian experience | 0.8071* (0.0274) | -0.2511* (0.0332) |
| Age 24 to 27 at separation | 0.1703* (0.0125) | -0.0258* (0.0100) |
| Age greater than 27 at separation | 0.3205* (0.0209) | -0.0102 (0.0120) |
| Some college | 0.1628* (0.0191) | -0.0410* (0.0187) |
| B.A. or better | 0.4937* (0.0607) | 0.1197* (0.0199) |
| Black or African American | 0.0740* (0.0202) | 0.2499* (0.0127) |
| Hispanic | 0.0739* (0.0349) | 0.0148 (0.0124) |
| Afghanistan or Iraq tour (2001-4) | -0.0602 (0.0552) | 0.0763* (0.0325) |
| Disability retirement from military | -0.1841* (0.0896) | -0.4265* (0.0250) |
| Disability severance from military | -0.1921* (0.0257) | -0.1573* (0.0132) |
| AFQT category 1 or 2 | 0.1322* (0.0242) | -0.0798* (0.0212) |

Table D.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|-------------|--------------|
| AFQT category 3a | 0.0409* | -0.0342* |
| | (0.0170) | (0.0144) |
| Top quartile promotion (E5 or better) | 0.3423* | 0.0022 |
| | (0.0425) | (0.0172) |
| Navy veteran | -0.0730* | -0.1011* |
| | (0.0112) | (0.0136) |
| Marine Corps veteran | 0.0302 | -0.0466* |
| | (0.0265) | (0.0184) |
| Air Force veteran | 0.0699* | -0.1090* |
| | (0.0240) | (0.0163) |
| Constant | 9.2362* | 1.2925* |
| | (0.0614) | (0.0471) |
| R-squared | 0.8704 | 0.0333 |
| N | 134,658 | 174,626 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, no college, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table D.3
Regression Results for Enlisted Nondisability Retirees with Interactions
Between Rating and Most Recent Year

| Characteristic | In Earnings | Earnings > 0 |
|----------------------------|-------------|--------------|
| 10% rating & year 2005 | -0.0283* | -0.0167 |
| | (0.0077) | (0.0113) |
| 20% rating & year 2005 | -0.0194* | 0.0006 |
| | (0.0084) | (0.0135) |
| 30% rating & year 2005 | 0.0014 | -0.0397* |
| | (0.0090) | (0.0129) |
| 40% rating & year 2005 | -0.0066 | -0.0048 |
| | (0.0108) | (0.0144) |
| 50% rating & year 2005 | -0.0043 | -0.0372* |
| | (0.0298) | (0.0167) |
| 60–70% rating & year 2005 | -0.0040 | -0.0351 |
| | (0.0522) | (0.0218) |
| 80–100% rating & year 2005 | -0.0558 | -0.1366* |
| | (0.1396) | (0.0452) |
| 10% disability rating | 0.0312* | 0.0933* |
| | (0.0082) | (0.0140) |
| 20% disability rating | -0.0071 | 0.0101 |
| | (0.0093) | (0.0127) |
| 30% disability rating | -0.0244* | -0.0239* |
| | (0.0104) | (0.0120) |

Table D.3—Continued

| Characteristic | ln Earnings | Earnings > 0 |
|--------------------------------|----------------------|----------------------|
| 40% disability rating | −0.0354* (0.0125) | −0.0940* (0.0167) |
| 50% disability rating | −0.0633 (0.0328) | −0.1795* (0.0198) |
| 60–70% disability rating | −0.1078* (0.0497) | −0.3662* (0.0252) |
| 80–100% disability rating | −0.1282 (0.0951) | −0.8148* (0.0297) |
| FY1994 separation cohort | 0.0442* (0.0111) | 0.0363* (0.0122) |
| FY1995 separation cohort | 0.1088* (0.0117) | 0.0615* (0.0128) |
| FY1996 separation cohort | 0.1881* (0.0122) | 0.0961* (0.0119) |
| FY1997 separation cohort | 0.2595* (0.0117) | 0.1239* (0.0121) |
| FY1998 separation cohort | 0.2978* (0.0143) | 0.1403* (0.0147) |
| FY1999 separation cohort | 0.3583* (0.0179) | 0.1574* (0.0167) |
| FY2000 separation cohort | 0.4139* (0.0181) | 0.1478* (0.0188) |
| FY2001 separation cohort | 0.4695* (0.0183) | 0.1699* (0.0201) |
| FY2002 separation cohort | 0.4659* (0.0144) | 0.1335* (0.0220) |
| FY2003 separation cohort | 0.5064* (0.0182) | 0.1495* (0.0211) |
| FY2004 separation cohort | 0.5760* (0.0217) | 0.1447* (0.0352) |
| 2 years of civilian experience | 0.1373* (0.0045) | 0.0237* (0.0042) |
| 3 years of civilian experience | 0.2237* (0.0103) | 0.0337* (0.0070) |
| 4 years of civilian experience | 0.2841* (0.0098) | 0.0323* (0.0092) |
| 5 years of civilian experience | 0.3360* (0.0117) | 0.0099 (0.0118) |
| 6 years of civilian experience | 0.3731* (0.0148) | −0.0199 (0.0135) |
| 7 years of civilian experience | 0.4071* (0.0132) | −0.0608* (0.0139) |

Table D.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| 8 years of civilian experience | 0.4329* (0.0131) | -0.1098* (0.0138) |
| 9 years of civilian experience | 0.4569* (0.0123) | -0.1608* (0.0129) |
| 10 years of civilian experience | 0.4810* (0.0106) | -0.2058* (0.0143) |
| 11 years of civilian experience | 0.4968* (0.0107) | -0.2446* (0.0159) |
| 12 years of civilian experience | 0.5156* (0.0124) | -0.2984* (0.0189) |
| Age 40 to 42 at separation | -0.0213* (0.0056) | -0.0561* (0.0079) |
| Age 43 to 45 at separation | -0.0406* (0.0070) | -0.1389* (0.0092) |
| Age greater than 45 at separation | -0.0761* (0.0113) | -0.3129* (0.0126) |
| High school graduate | 0.0087 (0.0199) | 0.0610* (0.0126) |
| Some college | 0.0774* (0.0222) | 0.0976* (0.0165) |
| B.A. or better | 0.2428* (0.0209) | 0.1839* (0.0242) |
| Black or African American | -0.0581* (0.0096) | 0.0523* (0.0104) |
| Hispanic | 0.0789 (0.0470) | 0.0382* (0.0159) |
| Afghanistan or Iraq tour (2001–4) | -0.0514* (0.0212) | -0.0121 (0.0330) |
| Female | -0.3540* (0.0170) | -0.2962* (0.0114) |
| AFQT category 1 or 2 | 0.0819* (0.0085) | -0.0488* (0.0083) |
| AFQT category 3a | 0.0486* (0.0109) | -0.0134 (0.0099) |
| Top quartile promotion (E5 or better) | 0.1013* (0.0074) | -0.0261* (0.0094) |
| Navy veteran | 0.0232* (0.0105) | -0.0092 (0.0095) |
| Marine Corps veteran | 0.0790* (0.0170) | 0.0132 (0.0132) |
| Air Force veteran | 0.0821* (0.0141) | 0.0396* (0.0113) |
| Constant | 9.8602* (0.0315) | 1.1676* (0.0433) |
| R-squared | 0.8849 | 0.0178 |
| N | 249,485 | 355,944 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, female, AFQT category 3b or 4, not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table D.4
Regression Results for All Officers with Interactions Between Rating and Year 2005

| Characteristic | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|
| 10–20% rating & year 2005 | –0.0391 (0.0229) | –0.0153 (0.0213) | –0.0380 (0.0278) | –0.0107 (0.0268) |
| 30–40% rating & year 2005 | –0.0254 (0.0246) | –0.0279 (0.0225) | –0.0109 (0.0415) | –0.0144 (0.0303) |
| 50–60% rating & year 2005 | –0.0058 (0.0382) | –0.0605 (0.0375) | –0.0012 (0.0768) | –0.0310 (0.0494) |
| 70–100% rating & year 2005 | –0.0126 (0.1020) | 0.0143 (0.0603) | –0.0208 (0.1497) | –0.0160 (0.0525) |
| 10–20% disability rating | –0.0862* (0.0272) | –0.0222 (0.0374) | –0.0995* (0.0277) | –0.0235 (0.0367) |
| 30–40% disability rating | –0.1339* (0.0296) | –0.1213* (0.0473) | –0.1302* (0.0428) | –0.1295* (0.0660) |
| 50–60% disability rating | –0.1739* (0.0425) | –0.3000* (0.0602) | –0.1892* (0.0734) | –0.3398* (0.1154) |
| 70–100% disability rating | –0.2754* (0.0693) | –0.8773* (0.0912) | –0.2336 (0.1390) | –0.9425* (0.0997) |
| FY1994 separation cohort | 0.0756* (0.0323) | 0.0280 (0.0389) | 0.0826 (0.0431) | –0.0158 (0.0410) |
| FY1995 separation cohort | 0.1696* (0.0434) | 0.0810 (0.0518) | 0.1551* (0.0377) | 0.0249 (0.0528) |
| FY1996 separation cohort | 0.2955* (0.0368) | 0.1067* (0.0419) | 0.2503* (0.0354) | 0.0486 (0.0487) |
| FY1997 separation cohort | 0.3705* (0.0360) | 0.1606* (0.0447) | 0.3072* (0.0348) | 0.0852 (0.0509) |
| FY1998 separation cohort | 0.4175* (0.0508) | 0.1926* (0.0533) | 0.3400* (0.0360) | 0.1169 (0.0631) |
| FY1999 separation cohort | 0.4647* (0.0444) | 0.2286* (0.0446) | 0.3652* (0.0368) | 0.1460* (0.0641) |
| FY2000 separation cohort | 0.5170* (0.0528) | 0.2579* (0.0469) | 0.3882* (0.0430) | 0.1762* (0.0635) |
| FY2001 separation cohort | 0.5661* (0.0637) | 0.2809* (0.0508) | 0.4041* (0.0628) | 0.1808* (0.0840) |
| FY2002 separation cohort | 0.6261* (0.0758) | 0.2540* (0.0814) | 0.3939* (0.0784) | 0.0826 (0.0982) |
| FY2003 separation cohort | 0.6486* (0.0829) | 0.2904* (0.0770) | 0.3903* (0.0928) | 0.0636 (0.1181) |
| FY2004 separation cohort | 0.6894* (0.0980) | 0.2545* (0.0819) | 0.3825* (0.0989) | 0.0334 (0.1134) |
| 2 years of civilian experience | 0.1384* (0.0152) | 0.0638* (0.0109) | 0.1576* (0.0129) | 0.0508* (0.0116) |
| 3 years of civilian experience | 0.2391* (0.0280) | 0.0816* (0.0202) | 0.2764* (0.0232) | 0.0435 (0.0243) |

Table D.4—Continued

| Characteristic | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|
| 4 years of civilian experience | 0.3133* (0.0392) | 0.0791* (0.0245) | 0.3636* (0.0312) | 0.0269 (0.0304) |
| 5 years of civilian experience | 0.3801* (0.0461) | 0.0668* (0.0300) | 0.4350* (0.0385) | 0.0047 (0.0367) |
| 6 years of civilian experience | 0.4287* (0.0522) | 0.0509 (0.0334) | 0.4936* (0.0433) | -0.0163 (0.0408) |
| 7 years of civilian experience | 0.4694* (0.0573) | 0.0295 (0.0357) | 0.5490* (0.0487) | -0.0391 (0.0434) |
| 8 years of civilian experience | 0.5029* (0.0572) | 0.0022 (0.0353) | 0.5842* (0.0506) | -0.0576 (0.0428) |
| 9 years of civilian experience | 0.5291* (0.0601) | -0.0240 (0.0295) | 0.6211* (0.0501) | -0.0821* (0.0373) |
| 10 years of civilian experience | 0.5665* (0.0634) | -0.0490 (0.0281) | 0.6673* (0.0526) | -0.1067* (0.0362) |
| 11 years of civilian experience | 0.5875* (0.0683) | -0.0700* (0.0294) | 0.7028* (0.0553) | -0.1260* (0.0363) |
| 12 years of civilian experience | 0.6145* (0.0705) | -0.1042* (0.0331) | 0.7204* (0.0619) | -0.1476* (0.0354) |
| Age 31 to 36 at separation | | | 0.1417* (0.0440) | 0.0391 (0.0274) |
| Age 37 to 43 at separation | | | 0.0323 (0.0989) | -0.1173* (0.0401) |
| Age > 43 at separation | -0.0221 (0.0141) | -0.1737* (0.0170) | -0.0444 (0.0928) | -0.2401* (0.0976) |
| Master's degree | 0.1584* (0.0409) | -0.0199 (0.0524) | 0.1268* (0.0275) | -0.0693 (0.0459) |
| Professional degree | 0.6656* (0.0689) | -0.1884* (0.0484) | 0.6695* (0.0371) | -0.2448* (0.0325) |
| Black or African American | -0.1112* (0.0294) | 0.0563 (0.0289) | -0.1264* (0.0304) | 0.1227* (0.0417) |
| Afghanistan or Iraq tour (2001–4) | 0.0327 (0.1021) | 0.0376 (0.0692) | -0.0726 (0.0735) | 0.0298 (0.0567) |
| Female veteran | -0.5215* (0.0351) | -0.4729* (0.0489) | -0.5317* (0.0312) | -0.5216* (0.0503) |
| Top quartile promotion (O4 or better) | 0.4370* (0.1130) | -0.0961* (0.0424) | 0.7120* (0.1553) | -0.1354* (0.0491) |
| Navy veteran | 0.0615* (0.0307) | -0.0068 (0.0278) | 0.0969* (0.0217) | 0.0015 (0.0257) |
| Marine Corps veteran | -0.0440 (0.0527) | 0.0535 (0.0454) | 0.0132 (0.0371) | 0.0642 (0.0448) |
| Air Force veteran | -0.0110 (0.0361) | -0.0497* (0.0244) | 0.0337 (0.0203) | -0.0525 (0.0272) |

Table D.4—Continued

| Characteristic | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
|-------------------------------------|-------------|--------------|-------------|--------------|
| Disability retirement from military | | | –0.2575* | –0.7072* |
| | | | (0.0677) | (0.0484) |
| Disability severance from military | | | –0.1380* | –0.2742* |
| | | | (0.0529) | (0.0386) |
| Constant | 10.3851* | 1.1253* | 10.4245* | 1.2958* |
| | (0.0638) | (0.0720) | (0.0681) | (0.1006) |
| R-squared | 0.9100 | 0.0185 | 0.8993 | 0.0341 |
| N | 69,062 | 88,792 | 101,881 | 117,346 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age 43 or less at separation for nondisability retirees (age < 31 for other officers), less than a master's degree, not black or African American, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation (only for other officers), not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Examination of How Trends in Veteran Ratings Affect Civilian Employment

Table E.1
Regression Results for Enlisted Men

| Characteristic | In Earnings | Earnings > 0 |
|------------------------------------|----------------------|----------------------|
| Average change from initial rating | -0.0015 (0.0049) | -0.0083* (0.0026) |
| 10% disability rating | -0.0371* (0.0181) | -0.0407* (0.0207) |
| 20% disability rating | -0.0666* (0.0228) | -0.1218* (0.0263) |
| 30% disability rating | -0.1257* (0.0297) | -0.2870* (0.0780) |
| 40% disability rating | -0.1211* (0.0330) | -0.3587* (0.0754) |
| 50% disability rating | -0.2196* (0.0640) | -0.6219* (0.1269) |
| 60–70% disability rating | -0.2522* (0.0699) | -0.9083* (0.1041) |
| 80–100% disability rating | -0.4029* (0.1591) | -1.7035* (0.1472) |
| FY1994 separation cohort | 0.0312* (0.0139) | -0.0055 (0.0072) |
| FY1995 separation cohort | 0.0773* (0.0146) | 0.0026 (0.0096) |
| FY1996 separation cohort | 0.1166* (0.0144) | 0.0087 (0.0082) |
| FY1997 separation cohort | 0.1499* (0.0138) | 0.0014 (0.0086) |
| FY1998 separation cohort | 0.1698* (0.0179) | -0.0070 (0.0094) |
| FY1999 separation cohort | 0.1670* (0.0190) | -0.0204 (0.0110) |
| FY2000 separation cohort | 0.1336* (0.0229) | -0.0654* (0.0130) |

Table E.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|-----------------------------------|-------------|--------------|
| FY2001 separation cohort | 0.1259* | -0.1150* |
| | (0.0230) | (0.0171) |
| FY2002 separation cohort | 0.0051 | -0.2212* |
| | (0.0247) | (0.0217) |
| FY2003 separation cohort | -0.0131 | -0.2845* |
| | (0.0277) | (0.0279) |
| FY2004 separation cohort | -0.0063 | -0.2835* |
| | (0.0344) | (0.0333) |
| 2 years of civilian experience | 0.1636* | -0.0307* |
| | (0.0066) | (0.0048) |
| 3 years of civilian experience | 0.2733* | -0.0795* |
| | (0.0112) | (0.0079) |
| 4 years of civilian experience | 0.3657* | -0.1162* |
| | (0.0163) | (0.0105) |
| 5 years of civilian experience | 0.4479* | -0.1618* |
| | (0.0213) | (0.0123) |
| 6 years of civilian experience | 0.5103* | -0.2087* |
| | (0.0246) | (0.0148) |
| 7 years of civilian experience | 0.5563* | -0.2587* |
| | (0.0263) | (0.0160) |
| 8 years of civilian experience | 0.5880* | -0.3118* |
| | (0.0258) | (0.0154) |
| 9 years of civilian experience | 0.6207* | -0.3668* |
| | (0.0242) | (0.0144) |
| 10 years of civilian experience | 0.6571* | -0.4034* |
| | (0.0246) | (0.0144) |
| 11 years of civilian experience | 0.7068* | -0.4390* |
| | (0.0262) | (0.0157) |
| 12 years of civilian experience | 0.7380* | -0.4736* |
| | (0.0285) | (0.0178) |
| Age 23 or 24 at separation | 0.1117* | -0.0205* |
| | (0.0138) | (0.0080) |
| Age 25 to 27 at separation | 0.2242* | -0.0235* |
| | (0.0141) | (0.0075) |
| Age greater than 27 at separation | 0.2903* | -0.1286* |
| | (0.0226) | (0.0087) |
| High school graduate | 0.0944* | 0.1726* |
| | (0.0150) | (0.0101) |
| Some college | 0.2776* | 0.1981* |
| | (0.0268) | (0.0152) |
| B.A. or better | 0.4257* | 0.1763* |
| | (0.0418) | (0.0218) |

Table E.1—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| Black or African American | –0.1499* (0.0153) | –0.0500* (0.0069) |
| Hispanic | –0.0242 (0.0126) | 0.0138 (0.0079) |
| Afghanistan or Iraq tour (2001–4) | –0.1315* (0.0238) | –0.0519 (0.0269) |
| Disability retirement from military | –0.1286* (0.0436) | –0.5465* (0.0240) |
| Disability severance from military | –0.1295* (0.0122) | –0.1475* (0.0079) |
| AFQT category 1 or 2 | 0.1228* (0.0141) | –0.0129* (0.0063) |
| AFQT category 3a | 0.0401* (0.0111) | 0.0031 (0.0064) |
| Top quartile promotion (E5 or better) | 0.3123* (0.0196) | –0.0005 (0.0114) |
| Navy veteran | 0.0579* (0.0106) | 0.0223* (0.0080) |
| Marine Corps veteran | 0.0765* (0.0161) | 0.0358* (0.0090) |
| Air Force veteran | 0.2043* (0.0280) | 0.0645* (0.0088) |
| Constant | 9.6301* (0.0632) | 1.6395* (0.0649) |
| R-Squared | 0.9187 | 0.0458 |
| N | 954,002 | 1,093,173 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

**Table E.2
Regression Results for Enlisted Women**

| Characteristic | In Earnings | Earnings > 0 |
|------------------------------------|----------------------|----------------------|
| Average change from initial rating | 0.0003 (0.0064) | –0.0053 (0.0039) |
| 10–20% disability rating | –0.0442 (0.0318) | –0.0307 (0.0200) |
| 30–40% disability rating | –0.1216* (0.0418) | –0.2802* (0.0502) |
| 50–60% disability rating | –0.2004* (0.0791) | –0.5496* (0.0856) |

Table E.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------|---------------------|----------------------|
| 70–100% disability rating | –0.1533 (0.1680) | –1.2027* (0.1339) |
| FY1994 separation cohort | 0.0179 (0.0220) | 0.0037 (0.0139) |
| FY1995 separation cohort | 0.0589* (0.0232) | –0.0192 (0.0140) |
| FY1996 separation cohort | 0.0724* (0.0217) | –0.0395* (0.0154) |
| FY1997 separation cohort | 0.1199* (0.0219) | –0.0363* (0.0133) |
| FY1998 separation cohort | 0.1305* (0.0253) | –0.0768* (0.0173) |
| FY1999 separation cohort | 0.1581* (0.0264) | –0.0787* (0.0164) |
| FY2000 separation cohort | 0.1614* (0.0306) | –0.0890* (0.0178) |
| FY2001 separation cohort | 0.1410* (0.0294) | –0.1855* (0.0223) |
| FY2002 separation cohort | 0.0190 (0.0299) | –0.2921* (0.0302) |
| FY2003 separation cohort | 0.0351 (0.0335) | –0.2934* (0.0289) |
| FY2004 separation cohort | 0.0117 (0.0386) | –0.3042* (0.0361) |
| 2 years of civilian experience | 0.1598* (0.0083) | –0.0227* (0.0077) |
| 3 years of civilian experience | 0.2687* (0.0119) | –0.0591* (0.0120) |
| 4 years of civilian experience | 0.3620* (0.0161) | –0.0898* (0.0153) |
| 5 years of civilian experience | 0.4541* (0.0194) | –0.1184* (0.0198) |
| 6 years of civilian experience | 0.5284* (0.0232) | –0.1467* (0.0220) |
| 7 years of civilian experience | 0.5828* (0.0243) | –0.1642* (0.0248) |
| 8 years of civilian experience | 0.6296* (0.0263) | –0.1931* (0.0247) |
| 9 years of civilian experience | 0.6738* (0.0249) | –0.2181* (0.0227) |
| 10 years of civilian experience | 0.7253* (0.0240) | –0.2237* (0.0237) |

Table E.2—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|----------------------|----------------------|
| 11 years of civilian experience | 0.7671* (0.0252) | −0.2239* (0.0265) |
| 12 years of civilian experience | 0.8047* (0.0314) | −0.2398* (0.0316) |
| Age 24 to 27 at separation | 0.1705* (0.0123) | −0.0246* (0.0102) |
| Age greater than 27 at separation | 0.3204* (0.0213) | −0.0087 (0.0123) |
| Some college | 0.1623* (0.0194) | −0.0419* (0.0187) |
| B.A. or better | 0.4916* (0.0590) | 0.1189* (0.0199) |
| Black or African American | 0.0743* (0.0203) | 0.2508* (0.0128) |
| Hispanic | 0.0753* (0.0345) | 0.0153 (0.0123) |
| Afghanistan or Iraq tour (2001–4) | −0.0549 (0.0629) | 0.0768* (0.0323) |
| Disability retirement from military | −0.1508 (0.1062) | −0.4396* (0.0359) |
| Disability severance from military | −0.1941* (0.0254) | −0.1562* (0.0131) |
| AFQT category 1 or 2 | 0.1323* (0.0242) | −0.0812* (0.0211) |
| AFQT category 3a | 0.0410* (0.0170) | −0.0350* (0.0143) |
| Top quartile promotion (E5 or better) | 0.3435* (0.0417) | 0.0009 (0.0171) |
| Navy veteran | −0.0727* (0.0111) | −0.1022* (0.0135) |
| Marine Corps veteran | 0.0304 (0.0263) | −0.0493* (0.0183) |
| Air Force veteran | 0.0706* (0.0234) | −0.1105* (0.0160) |
| Constant | 9.2373* (0.0626) | 1.2865* (0.0482) |
| R-squared | 0.8702 | 0.0333 |
| N | 134,658 | 174,626 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, no college, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation, AFQT category 3b or 4, not top quartile promotion, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

Table E.3
Regression Results for Enlisted Nondisability Retirees

| Characteristic | In Earnings | Earnings > 0 |
|------------------------------------|----------------------|----------------------|
| Average change from initial rating | -0.0007 (0.0070) | -0.0125* (0.0038) |
| 10% disability rating | 0.0286 (0.0201) | 0.1213* (0.0148) |
| 20% disability rating | -0.0084 (0.0229) | 0.0450* (0.0151) |
| 30% disability rating | -0.0225 (0.0195) | -0.0036 (0.0125) |
| 40% disability rating | -0.0350 (0.0202) | -0.0668* (0.0170) |
| 50% disability rating | -0.0579* (0.0271) | -0.1599* (0.0187) |
| 60-70% disability rating | -0.1052* (0.0468) | -0.3527* (0.0237) |
| 80-100% disability rating | -0.1432 (0.1010) | -0.8489* (0.0300) |
| FY1994 separation cohort | 0.0438* (0.0113) | 0.0368* (0.0123) |
| FY1995 separation cohort | 0.1085* (0.0117) | 0.0631* (0.0127) |
| FY1996 separation cohort | 0.1877* (0.0117) | 0.0980* (0.0120) |
| FY1997 separation cohort | 0.2587* (0.0119) | 0.1263* (0.0121) |
| FY1998 separation cohort | 0.2968* (0.0145) | 0.1429* (0.0146) |
| FY1999 separation cohort | 0.3574* (0.0187) | 0.1601* (0.0166) |
| FY2000 separation cohort | 0.4123* (0.0183) | 0.1496* (0.0184) |
| FY2001 separation cohort | 0.4674* (0.0180) | 0.1702* (0.0192) |
| FY2002 separation cohort | 0.4632* (0.0148) | 0.1330* (0.0207) |
| FY2003 separation cohort | 0.5020* (0.0183) | 0.1459* (0.0187) |
| FY2004 separation cohort | 0.5680* (0.0210) | 0.1286* (0.0280) |
| 2 years of civilian experience | 0.1368* (0.0049) | 0.0245* (0.0043) |
| 3 years of civilian experience | 0.2235* (0.0113) | 0.0360* (0.0072) |

Table E.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|-----------------------------------|----------------------|----------------------|
| 4 years of civilian experience | 0.2834* (0.0108) | 0.0358* (0.0096) |
| 5 years of civilian experience | 0.3352* (0.0131) | 0.0149 (0.0123) |
| 6 years of civilian experience | 0.3729* (0.0150) | -0.0140 (0.0142) |
| 7 years of civilian experience | 0.4062* (0.0154) | -0.0537* (0.0148) |
| 8 years of civilian experience | 0.4320* (0.0165) | -0.1017* (0.0148) |
| 9 years of civilian experience | 0.4547* (0.0167) | -0.1516* (0.0137) |
| 10 years of civilian experience | 0.4800* (0.0145) | -0.1961* (0.0150) |
| 11 years of civilian experience | 0.4952* (0.0148) | -0.2349* (0.0163) |
| 12 years of civilian experience | 0.5117* (0.0165) | -0.2901* (0.0192) |
| Age 40 to 42 at separation | -0.0213* (0.0056) | -0.0560* (0.0078) |
| Age 43 to 45 at separation | -0.0406* (0.0070) | -0.1385* (0.0091) |
| Age greater than 45 at separation | -0.0766* (0.0115) | -0.3115* (0.0126) |
| High school graduate | 0.0087 (0.0200) | 0.0613* (0.0125) |
| Some college | 0.0782* (0.0217) | 0.0972* (0.0163) |
| B.A. or better | 0.2431* (0.0211) | 0.1848* (0.0242) |
| Black or African American | -0.0584* (0.0111) | 0.0556* (0.0101) |
| Hispanic | 0.0817 (0.0514) | 0.0402* (0.0158) |
| Afghanistan or Iraq tour (2001–4) | -0.0512* (0.0213) | -0.0120 (0.0291) |
| Female | -0.3551* (0.0169) | -0.2933* (0.0113) |
| AFQT category 1 or 2 | 0.0822* (0.0085) | -0.0509* (0.0083) |
| AFQT category 3a | 0.0490* (0.0118) | -0.0144 (0.0099) |

Table E.3—Continued

| Characteristic | In Earnings | Earnings > 0 |
|---------------------------------------|---------------------|----------------------|
| Top quartile promotion (E5 or better) | 0.1017* (0.0075) | −0.0266* (0.0094) |
| Navy veteran | 0.0219 (0.0120) | −0.0122 (0.0095) |
| Marine Corps veteran | 0.0818* (0.0140) | 0.0108 (0.0131) |
| Air Force veteran | 0.0803* (0.0160) | 0.0363* (0.0113) |
| Constant | 9.8617* (0.0347) | 1.1623* (0.0438) |
| R-squared | 0.8836 | 0.1785 |
| N | 249,485 | 355,944 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age < 23 at separation, not high school graduate, white non-Hispanic, not served in Afghanistan or Iraq conflicts between 2001 and 2004, female, AFQT category 3b or 4, not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

**Table E.4
Results for All Officers**

| Characteristic | Nondisability Retirees | | Others | |
|------------------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| Average change from initial rating | −0.0007 (0.0138) | 0.0073 (0.0086) | −0.0028 (0.0104) | 0.0060 (0.0098) |
| 10–20% disability rating | −0.0965* (0.0339) | −0.0399 (0.0345) | −0.0971* (0.0287) | −0.0318 (0.0459) |
| 30–40% disability rating | −0.1436* (0.0362) | −0.1360* (0.0487) | −0.1282* (0.0503) | −0.1477 (0.0764) |
| 50–60% disability rating | −0.1919* (0.0479) | −0.3254* (0.0674) | −0.1878* (0.0683) | −0.3222* (0.1004) |
| 70–100% disability rating | −0.3013* (0.1431) | −0.8419* (0.1071) | −0.2380 (0.1382) | −0.8839* (0.0966) |
| FY1994 separation cohort | 0.0646 (0.0388) | 0.0295 (0.0455) | 0.0875* (0.0349) | −0.0275 (0.0375) |
| FY1995 separation cohort | 0.1660* (0.0385) | 0.0897* (0.0411) | 0.1511* (0.0378) | 0.0109 (0.0461) |
| FY1996 separation cohort | 0.2837* (0.0365) | 0.1128* (0.0423) | 0.2544* (0.0322) | 0.0416 (0.0536) |
| FY1997 separation cohort | 0.3534* (0.0422) | 0.1515* (0.0429) | 0.3154* (0.0332) | 0.0803 (0.0521) |
| FY1998 separation cohort | 0.4031* (0.0485) | 0.1933* (0.0521) | 0.3418* (0.0343) | 0.1044 (0.0630) |
| FY1999 separation cohort | 0.4701* (0.0540) | 0.2222* (0.0550) | 0.3688* (0.0393) | 0.1377* (0.0672) |

Table E.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|-----------------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| FY2000 separation cohort | 0.5037* (0.0589) | 0.2590* (0.0614) | 0.3931* (0.0453) | 0.1629* (0.0573) |
| FY2001 separation cohort | 0.5546* (0.0717) | 0.2857* (0.0583) | 0.4008* (0.0571) | 0.1647* (0.0765) |
| FY2002 separation cohort | 0.5943* (0.0959) | 0.2514* (0.0808) | 0.3975* (0.0843) | 0.0570 (0.0895) |
| FY2003 separation cohort | 0.6367* (0.0779) | 0.2715* (0.0872) | 0.3943* (0.0962) | 0.0407 (0.1080) |
| FY2004 separation cohort | 0.6837* (0.1003) | 0.2556* (0.0797) | 0.3907* (0.1015) | 0.0223 (0.1134) |
| 2 years of civilian experience | 0.1384* (0.0147) | 0.0655* (0.0107) | 0.1568* (0.0130) | 0.0481* (0.0117) |
| 3 years of civilian experience | 0.2400* (0.0281) | 0.0838* (0.0201) | 0.2748* (0.0241) | 0.0392 (0.0247) |
| 4 years of civilian experience | 0.3141* (0.0391) | 0.0809* (0.0247) | 0.3614* (0.0323) | 0.0217 (0.0310) |
| 5 years of civilian experience | 0.3823* (0.0466) | 0.0683* (0.0308) | 0.4320* (0.0401) | −0.0007 (0.0372) |
| 6 years of civilian experience | 0.4307* (0.0512) | 0.0516 (0.0339) | 0.4899* (0.0451) | −0.0224 (0.0414) |
| 7 years of civilian experience | 0.4685* (0.0546) | 0.0284 (0.0375) | 0.5479* (0.0511) | −0.0451 (0.0451) |
| 8 years of civilian experience | 0.4999* (0.0555) | 0.0019 (0.0360) | 0.5819* (0.0523) | −0.0646 (0.0439) |
| 9 years of civilian experience | 0.5267* (0.0586) | −0.0266 (0.0311) | 0.6202* (0.0523) | −0.0887* (0.0388) |
| 10 years of civilian experience | 0.5683* (0.0660) | −0.0522 (0.0299) | 0.6659* (0.0551) | −0.1139* (0.0377) |
| 11 years of civilian experience | 0.5860* (0.0687) | −0.0734* (0.0312) | 0.7004* (0.0600) | −0.1350* (0.0386) |
| 12 years of civilian experience | 0.6087* (0.0738) | −0.1155* (0.0371) | 0.7171* (0.0653) | −0.1579* (0.0379) |
| Age greater than 43 at separation | −0.0285 (0.0160) | −0.1832* (0.0205) | 0.0078 (0.0825) | −0.2456* (0.0754) |
| Master's degree | 0.1532* (0.0373) | −0.0232 (0.0439) | 0.1375* (0.0291) | −0.0444 (0.0336) |
| Professional degree | 0.6144* (0.1072) | −0.1971* (0.0573) | 0.6671* (0.0419) | −0.2451* (0.0333) |
| Black or African American | −0.1195* (0.0349) | 0.0717* (0.0305) | −0.1249* (0.0284) | 0.0993* (0.0306) |

Table E.4—Continued

| Characteristic | Nondisability Retirees | | Others | |
|---------------------------------------|------------------------|----------------------|----------------------|----------------------|
| | In Earnings | Earnings > 0 | In Earnings | Earnings > 0 |
| Afghanistan or Iraq tour (2001–4) | –0.0228 (0.0993) | 0.0220 (0.0869) | –0.0710 (0.0693) | 0.0333 (0.0522) |
| Female veteran | –0.5384* (0.0446) | –0.4784* (0.0459) | –0.5282* (0.0258) | –0.5309* (0.0403) |
| Top quartile promotion (O4 or better) | 0.3831* (0.1260) | –0.0947* (0.0342) | 0.6957* (0.1408) | –0.1220* (0.0497) |
| Navy veteran | 0.0584 (0.0338) | –0.0215 (0.0229) | 0.0901* (0.0247) | 0.0030 (0.0205) |
| Marine Corps veteran | –0.0306 (0.0498) | 0.0345 (0.0356) | 0.0101 (0.0378) | 0.0731 (0.0453) |
| Air Force veteran | –0.0035 (0.0378) | –0.0380 (0.0282) | 0.0301 (0.0266) | –0.0609* (0.0222) |
| Age 31 to 36 at separation | | | 0.1434* (0.0422) | 0.0401 (0.0251) |
| Age 37 to 43 at separation | | | 0.0514 (0.0935) | –0.1142* (0.0442) |
| Disability retirement from military | | | –0.3070* (0.0918) | –0.7317* (0.0593) |
| Disability severance from military | | | –0.1359* (0.0469) | –0.2708* (0.0386) |
| R-squared | 0.9015 | 0.186 | 0.9007 | 0.0339 |
| N | 69,062 | 88,792 | 101,881 | 117,346 |

NOTES: The omitted reference categories are no rated SCD, FY1993 separation, 1 year of experience, age 43 or less at separation for nondisability retirees (age < 31 for other officers), less than a master's degree, not black or African American, not served in Afghanistan or Iraq conflicts between 2001 and 2004, nondisability separation (only for other officers), not top quartile promotion, male, and Army. An asterisk indicates that the regression coefficient is significant at $p < 0.05$.

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